



Master program “Mind and Brain”

Berlin School of Mind and Brain

Humboldt-Universität zu Berlin

Winter semester 2020/2021

ALL TIMES ARE MEANT S.T. (SHARP)!

Monday	Tuesday	Wednesday	Thursday	Friday
10:00 – 11:30 Berpohl/Brandt/ Bajbouj Lecture: Clinical Neuroscience	9:00 – 10:30 Dziobek Interacting Minds: On constructs, operationalizations, and applications from the social neurosciences (B)	9:00 – 10:30 Finke Tutorial: Clinical Neuroscience	9:00 – 10:30 Dziobek Lecture: Basic Research Methods	9:00 – 10:30 Ott Tutorial: Neuroanatomy and Neuro- physiology
10:00 – 11:30 Dziobek Colloquium (B)	11:00 – 12:30 Dziobek - Social interaction dis- orders: towards a transdiagnostic classification of mental disorders(B)	11:00 – 12:30 Matic Tutorial: Cognitive Neuroscience	11:00 – 12:30 Bayer Tutorial: Basic Research Methods	11:00 – 12:30 Brass Virtual reality in psychological research (B)
12:00 – 13:30 Haynes Lecture: Cognitive Neuroscience	13:30 – 15:00 Brass Research seminar: Social and embodied cognition (B)	13:30 – 15:00 Caporuscio / Schwarz Tutorial: Philosophy of Mind	13:30 – 15:00 Bayer Face Processing (B)	
14:15 – 15:45 Pauen / Haynes Neural correlates of consciousness (M/B)	15:30 – 17:00 Coelho Mollo Philosophy of Science (M)	15:30 – 17:00 Hipólito Ontology of Cognition (M)	15:30 – 17:00 Hipólito E-Cognition and Dynamical Systems (M)	
	18:15 – 19:45 Pauen Philosophical Colloquium (M)			

Block courses: 19 – 23 Oct 2020, 9:00 – 15:30 : D. Ott: Neuroanatomy and Neurophysiology

26 – 30 Oct 2020, 9:00 – 15:30 : M. Pauen: Philosophy of Mind

8 – 12 March 2021 – J.-D. Haynes/Th. Schmidt : Ethics and Neuroscience

15 – 19 March, M. Fischer/M. Pauen/F. Pulvermüller: Embodied Cognition (M/B)

Comprehensive Course Calendar

Block courses:

Before the start of the semester:

D. Ott *Neuroanatomy and Neurophysiology* *19 – 23 Oct 2020 (p. 3)*

M. Pauen *Basic Phil. Concepts and Philosophy of Mind* *26 - 30 Oct 2020 (p. 3)*

After the end of the semester:

J.-D. Haynes / Th. Schmidt *Ethics and Neuroscience* *8 – 12 March 2021 (p. 5)*

M. Fischer/M. Pauen/F. Pulvermüller *Embodied Cognition (M/B)* *15 – 19 March (p. 10)*

Mandatory Lectures:

Block course: 19 – 23 Oct 2020, 9:00 – 15:30

Neurophysiology and Neuroanatomy

Dr. Derek Ott (Max Planck School of Cognition / Unfallkrankenhaus Berlin)

venue: Zoom

*Mind and Brain and Einstein Center for Neurosciences students **only!***

The course provides a basic understanding of where (anatomy) in the brain what (physiology) happens. It is of particular value for those students whose background is mainly in a “mind” science such as linguistics or philosophy. Participating students will learn about the fundamental units of brain anatomy, such as lobes, areas, columns, etc. A special emphasis will be put on structure function relationship, i.e., which brain area is responsible for which aspect of brain function. It will be explained how brain areas interact, and what theories exist about bringing together aspects of information from different brain areas into one percept or thought (binding). The physiology part of the course will address fundamentals of neuronal functioning, interaction of neurons, neurotransmission, and will provide an understanding of neurovascular coupling, a basis of the most important functional neuroimaging method, fMRI.

Block course: 26 - 30 October 2020, 9:00 – 15:30

Basic Philosophical Concepts and Philosophy of Mind

Prof. Dr. Michael Pauen (Department of Philosophy, HU Berlin)

venue: Zoom

The course provides a systematic overview over the most central issues in the philosophy of mind. Participating students will learn to apply relevant philosophical concepts, they will be taught to construct a valid argument; they will learn how to distinguish between the most important options in the mind–body debate and how to assess the consequences of neuroscientific research.

Monday 10:00 – 11:30

start: 02.11.2020

Clinical Neuroscience

Prof. Dr. Felix Bormpohl (Klinik für Psychiatrie und Psychotherapie, Charité) / Prof. Dr. Stephan Brandt (Klinik für Neurologie, Charité) / Prof. Dr. Malek Bajbouj (Klinik für Psychiatrie und Psychotherapie, Charité)

venue: Zoom

Mind and Brain and Einstein Center for Neurosciences students **only!**

The course provides basic knowledge about the neuroscience of clinical psychiatry and neurology. Students will learn the basic pathophysiology of important disorders of the brain and how the brain reacts to these challenges. Participating students will learn (a) how alterations of different cognitive systems (e.g., emotion regulation, language, reward) result in mental disorders, (b) how these alterations can be studied using neuroscience methods, (c) how this knowledge may translate into therapeutic applications. Particular emphasis will be placed on practical aspects of clinical neuroscience, e.g. by demonstrating the examination of a patient.

Ch. Zorumski/E. Rubin, *Psychiatry and Clinical Neuroscience*, Oxford 2014

Monday 12:00 -13:30

start: 02.11.2020

Cognitive Neuroscience

Prof. Dr. John-Dylan Haynes (Bernstein Center for Computational Neuroscience Berlin)

venue: Zoom

*Mind and Brain, Bernstein-Center and Einstein Center for Neurosciences students **only!***

The course provides an introduction to the field of Cognitive Neuroscience which is the study of the neural basis of perception, cognition, and behavior in the intact human brain. The course will cover core topics in Cognitive Neuroscience, including typical experimental paradigms and research methods.

A light introduction to Cognitive Neuroscience for beginners:

J. Ward. *The student's guide to cognitive neuroscience*. Psychology Press, 4th edition, 2019.

Thursday 9:00 – 10:30

start: 05.11.2020

Basic Research Methods

Prof. Dr. Isabel Dziobek (Institut für Psychologie, HU Berlin / Berlin School of Mind and Brain)

venue: Zoom

Mind and Brain students **only!**

This course intends to provide knowledge on the theoretical principles and practical applications of psychological research methods in general and neurocognitive methods in particular. It will cover predominantly important steps of conducting quantitative research such as research questions, the design of experiments, validity, types of data, and reporting results. Various technologies for measuring brain structure and function and the limitations of these techniques will also be covered, including functional magnetic resonance imaging (fMRI), event-related potentials (ERPs), transcranial magnetic stimulation (TMS). In addition, eyetracking measures and psychophysiological measures such as skin conductance response will be covered. The application of those methods will be illustrated with examples from various cognitive abilities (e.g., emotion understanding, memory). Wherever possible, the course will allow for hands-on experience with the methods (cf. tutorial). The goal for students is to be able to understand the methods covered and critically evaluate research that uses them.

Block course: 8 – 12 March 2021, 9:00 – 17:00

Winter School on Ethics and Neuroscience

Prof. Dr. John-Dylan Haynes (Bernstein Center for Computational Neuroscience Berlin)

Prof. Dr. Thomas Schmidt (Institut für Philosophie, HU Berlin)

venue: Zoom

Participants will be familiarized with basic ethical concepts and theories and will gain an overview of ethically relevant aspects of neuroscience. Thereby, participants will learn to know how ethical issues are tackled in philosophical ethics, and they will get an overall view of the theoretical interfaces between ethics and neuroscience.

Mandatory Tutorials:

Wednesday 9:00 – 10:30

start: 04.11.2020

Tutorial: Clinical Neuroscience

Prof. Dr. Carsten Finke (Charité – Universitätsmedizin Berlin / Berlin School of Mind and Brain)

venue: Zoom

Wednesday 11:00 – 12:30

start: 04.11.2020

Tutorial: Cognitive Neuroscience

Karla Matic (Max Planck School of Cognition)

venue: Zoom

Wednesday 13:30 – 15:00

start: 04.11.2020

Tutorial: Philosophy of Mind

Chiara Caporuscio / Sera Schwarz (Berlin School of Mind and Brain)

venue: Zoom

Thursday 11:00 – 12:30

start: 05.11.2020

Tutorial: Basic Research Methods

Dr. Mareike Bayer (Institut für Psychologie, HU Berlin / Berlin School of Mind and Brain)

venue: Zoom

Friday 9:00 – 10:30

start: 06.11.2020

Tutorial: Neurophysiology and Neuroanatomy

Dr. Derek Ott (Max Planck School of Cognition / Unfallkrankenhaus Berlin)

venue: Zoom

Elective Courses:

Focus MIND

Monday 14:15 – 15:45

start: 02.11.2020

Neural correlates of consciousness

Prof. Dr. Michael Pauen (Institut für Philosophie, HU Berlin / Berlin School of Mind and Brain) / Prof. Dr. John-Dylan Haynes (Bernstein Center for Computational Neuroscience Berlin)

venue: Zoom

MIND / BRAIN

The program to determine the Neural Correlates of Consciousness emerged in the late 1990s when it became clear that interdisciplinary cooperation was essential for making progress in our understanding of consciousness, theoretical disagreements notwithstanding. Setting these theoretical disagreements aside in order to focus on simple neuroscientific data like the Neural Correlates of Consciousness could therefore appear as an attractive and tractable intermediate goal.

Twenty years later, it is now time to take stock. We will read the original program as it has been set up by David Chalmers, discuss successes and failures, and will try to give an outlook on possible future developments.

Literatur:

Chalmers, D. J. (2000). What is a Neural Correlate of Consciousness? *Neural Correlates of Consciousness. Empirical and Conceptual Questions*. T. Metzinger. Cambridge MA, MIT Press: 17-40.

Chalmers, D. J. (1998). On the search for the neural correlate of consciousness. *Toward a Science of Consciousness*. S. Hameroff, A. Kaszniak and A. Scott. Cambridge MA, MIT Press.

Koch, C., et al. (2016). "Neural correlates of consciousness: progress and problems." *Nat Rev Neurosci* 17(5): 307-321.

Tuesday 15:30 – 17:00

start: 03.11.2020

Philosophy of Science

Dr. Dimitri Coelho Mollo (Cluster Science of Intelligence, HU Berlin / Berlin School of Mind and Brain)

venue: Zoom

MIND

In this seminar we will look at some of the central questions in the philosophy of science. We will examine debates about scientific realism and antirealism, the nature of scientific explanation, reductionism, and the (dis)unity of science. Questions that we will tackle include: What sets science apart from non-science? Should we be ontologically committed to the theoretical posits of our best sciences? How do scientific explanations work, and what tells the good from the bad ones? Are the special sciences reducible to more basic sciences? Is science unified or plural? We will read classic as well as recent work in philosophy of science to help shed light on these and related questions.

Wednesday 15:30 – 17:00

start: 04.11.2020

Ontology of Cognition

Inês Hipólito (Berlin School of Mind and Brain / Institut für Philosophie, HU Berlin)

venue: Zoom

MIND

What are the ontological commitments of cognition? Philosophy of cognition inherits a great deal from philosophy of science in answering this question. In philosophy of science, scientific theories are the basis of predictions and explanations. This course explores how philosophers of cognition are naturally inclined to model cognitive activity on theoretical activity. This is the case for philosophers as far apart on the spectrum as Fodor (1983), Paul (1979) and Patricia Churchland (1986), or Egan (2019). But are there strong arguments to think of cognition as essentially theoretical in character? In this seminar, we will be critically assessing the strength of the arguments to think that cognitive activity as essentially theorising, either in virtue of its being propositional or model-like. To do so, we will focus on the Modularity of Mind, and Bayesian theories of cognition. Within those frameworks, we will consider and think the philosophical puzzles that arise, as well as their explanatory capacity to make best sense of empirical evidence.

Introductory literature:

Churchland, P. M. (1979). Scientific realism and the plasticity of mind. Cambridge University Press.

- Churchland, P. S. (1986). Neurophilosophy: toward a unified science of the mind. *Brain*, 1.
- Egan, F. (2019) The nature and function of content in computational models. In Sprevak, M., & Colombo, M. (Eds.). *The Routledge Handbook of the Computational Mind*. Routledge.
- Fodor, J. A. (1983). *The modularity of mind*. MIT press.
- Hohwy, J. (2020). New directions in predictive processing. *Mind & Language*, 35(2), 209-223.

Thursday 15:30 – 17:00

start: 05.11.2020

E-Cognition and Dynamical Systems

Inês Hipólito (Berlin School of Mind and Brain / Institut für Philosophie, HU Berlin)

venue: Zoom

MIND

Are facts about the nervous system sufficient to explain intelligent cognition? Can mental health sufficiently be explained by neuroscience? Do brainless living beings possess cognitive capacities in their adaptation to survive their environments? Does intelligent cognition possess properties that do not reduce to the nervous system? In this seminar, we will explore the so-called E-Cognition positions as a rejection of the reduction of intelligent cognition to the nervous system. Specifically, we will appraise cognition in terms of dynamically unfolding, situated embodied interactions between the organism and aspects of their world. Further, we will examine embodied cognition through the lens of the theory that seems best equipped to formally respond to questions resulting from intelligent interactions with the environment — Dynamical Systems Theory.

Introductory literature:

Newen, A., De Bruin, L., & Gallagher, S. (Eds.). (2018). *The Oxford handbook of 4E cognition*. Oxford University Press.

Broer, H., Takens, F., & Hasselblatt, B. (Eds.). (2010). *Handbook of dynamical systems*. Elsevier.

Block course: 15 – 19 March 2021, 10:00 – 17:00

Embodied Cognition

Prof. Dr. Martin Fischer (Universität Potsdam) / Prof. Dr. Michael Pauen (Berlin School of Mind and Brain) / Prof. Dr. Friedemann Pulvermüller (FU Berlin)

venue: Zoom / Webex

Preparatory meeting: 26.11.2020, 18:15 – 20:15

MIND / BRAIN

Traditionally, philosophy, psychology, and linguistics used to focus on abstract descriptions when it comes to explain and understand cognition. In particular, the conceptual or semantic system has been framed in terms of a symbolic system in which meaning is defined in terms of abstract features or relationships between symbols. This view has been challenged in recent years both by philosophical arguments and empirical evidence showing that cognitive processes can only be understood if bodily processes are taken into account, that is, if meaning and concepts are ‘grounded’ in the world and in human actions and emotions. In addition, results from brain research have been interpreted to provide strong evidence that concepts are grounded and ‘embodied’. The current ‘embodiment debate’ aims at an integrative account that tackles relevant philosophical issues and explains a broad range of psychological and neuroscience data.

The seminar will start with a discussion of the main philosophical issues. Afterwards, empirical papers from psychology, linguistics and neuroscience which fueled the debate about embodied cognition will be read.

Focus BRAIN

Tuesday 9:00 – 10:30

start: 03.11.2020

Interacting Minds: On constructs, operationalizations, and applications from the social neurosciences

Prof. Dr. Isabel Dziobek (Institut für Psychologie, HU Berlin / Berlin School of Mind and Brain)

venue: Zoom

BRAIN

Human beings are social animals. We evolved in social groups, and therefore, our brains are wired to interact with others and behave in social situations. By using neurocognitive methods over the last two decades, scientists have been asking questions about the body -most prominently the brain - and human social behaviors. The overarching goals of the field of social neuroscience are the understanding the neural bases of social behavior, affect, and social cognition. The primary aim of this seminar is to survey key constructs (e.g. empathy, social emotion regulation) and operationalizations as well as recent applications such as in clinical contexts and social robotics in social neuroscience.

Tuesday 11:00 – 12:30

start: 03.11.2020

Social interaction disorders: towards a transdiagnostic classification of mental disorders with involvement of socio-emotional dysfunction

Prof. Dr. Isabel Dziobek (Institut für Psychologie, HU Berlin / Berlin School of Mind and Brain)

venue: Zoom

BRAIN

Despite decades of research, biomarker identification for psychiatric disorders has been lacking and the development of effective interventions has been limited. High rates of comorbidity and shared pathophysiologic mechanisms across disorders has redirected efforts towards the identification of core psychological processes that lead to psychopathology and to the development of interventions that can be applied transdiagnostically. This seminar will focus on this new conceptualization by focusing on systems for social processes such as perception and interpretation of mental states and attachment. Information will be conveyed on biopsychological underpinnings of psychiatric disorders involving defining social interaction problems such as autism spectrum disorders, borderline personality disorders, and social anxiety disorder. A special focus will be on advantages of a transdiagnostic approach for diagnosis and treatment of social interaction disorders.

Tuesday 13:30 – 15:00

start: 03.11.2020

Research seminar: Social and embodied cognition

Prof. Dr. Marcel Brass (Berlin School of Mind and Brain)

venue: Zoom

BRAIN

The seminar will feature lectures by international researchers from the domain of social and embodied cognition who will present their ongoing research. The aim of the seminar is to provide the opportunity for discussing research designs, results and theoretical models with the scientists in charge of the research. It will cover a broad range of topics from the domain of social neuroscience.

Thursday 13:30 – 15:00

start: 05.11.2020

Face Perception

Dr. Mareike Bayer (Institut für Psychologie, HU Berlin / Berlin School of Mind and Brain)

venue: Zoom

BRAIN

Face perception is key to human social interaction. Many different types of important information are visible in faces (e.g. identity, emotion, attraction, familiarity) and the processes and mechanisms involved in extracting this information are complex and often highly specialized. The range of perspectives and techniques in face perception research has in recent years led to many important advances in our understanding of face processing. We will focus in this class on some of the most influential science on face perception including on social aspects of face perception (attraction, recognition, emotion), the neural networks and mechanisms underlying face perception (using e.g. Magnetic Resonance Imaging (fMRI), Electroencephalography (EEG) and disorders of face perception.

Friday 11:00 – 12:30

start: 06.11.2020

Virtual reality in psychological research

Prof. Dr. Marcel Brass (Berlin School of Mind and Brain)

venue: Zoom

BRAIN

While virtual reality (VR) has been used as a research tool in psychology for more than three decades, recent hard- and software developments have made VR affordable and accessible to a broader research community. In this seminar, we will discuss the potential and pitfalls of VR as a research tool in psychology and will discuss successful examples of VR research from different domains such as social and cognitive psychology.

Colloquia:

Tuesday 18:15 – 19:45

start: 10.11.2020

Prof. Dr. Michael Pauen (Institut für Philosophie, HU Berlin / Berlin School of Mind and Brain)

Philosophical Research-Colloquium

venue: Zoom

MIND

The weekly colloquium is open for advanced students and doctoral students who are interested in current debates in the philosophy of mind. We will discuss recent research papers as well as papers by the participants.

Participation by appointment only. Please contact Ms Anja Papenfuss if you want to sign up for the colloquium: mb-admin@hu-berlin.de.

Monday 10:00 – 11:30

start: 02.11.2020

Research Colloquium

Prof. Dr. Isabel Dziobek (Institut für Psychologie, HU Berlin / Berlin School of Mind and Brain)

venue: Zoom

BRAIN

Participation by appointment only. Please contact my lab manager Meri Lehmuskallio **by 26 October** if you want to sign up for the colloquium: mb-soccog@hu-berlin.de.

If you have questions, please contact

Dr. Dirk Mende

mb-education@hu-berlin.de

NB: The Mandatory Lectures and the Mandatory Tutorials are for Mind and Brain students only. The Elective Courses are open for students of other programs. If you are a student of Humboldt-Universität, please register for these courses in the *Überfachlicher Wahlpflichtbereich* section of AGNES. If you are a student of another university, you have to fill a registration as guest auditor or visiting student in the beginning of the course. Please find information here: <http://www.mind-and-brain.de/master/course-calendars/>