

**University calendar**

**Master' program "Mind and Brain"**

**Berlin School of Mind and Brain**

**Humboldt-Universität zu Berlin**

**Summer semester 2015**

*Please do not try to attend courses which are flagged out as for Mind and Brain students **only!***

Monday	Tuesday	Wednesday	Thursday	Friday
9:30 – 11:00 Krifka/Pulvermüller Language and the Brain				
11:15 – 12:45 Dziobek Empirical Research Training (I) (Mind Track)	10:15 – 11:45 Dziobek Experimental Psychopathology and Psychotherapy (M/B)	10:00 – 11:30 Herbst Tutorial: Cognitive Neuroscience	10:15 – 11:45 Kästner Introduction to the Philosophy of Science (M)	10:00 – 11:30 Dziobek Empirical Research Training (II) (Brain Track)
13:30 – 15:00 Empirical Research Training (I) (Mind Track)	12:15 – 13:45 Chaumon Learning to see in an (un)predictable world (M/B)  - Pulvermüller Colloquium: Progress in Brain Language Research (M/B)	12:15 – 13:45 Schomers Tutorial: Language and the Brain	12:15 – 13:45 Dziobek Colloquium	11:45 – 13:15 Empirical Research Training (II) (Brain Track)
	14:15 – 15:45 Moore Nature vs Nurture (M)	14:15 – 15:45 Finke Cognitive Deficits in Neurological Diseases (B)	14:15 – 15:45 Finke Structural and functional MRI analyses in neurological disorders (B)	14:15 – 15:45 Gaus Tutorial: Ethics and Neuroscience
15:30 – 17:00 Pauen Philosophy of Mind	16:15 – 17:45 Herrojo Ruiz Cognitive Neuroscience of Music (M/B)	16:15 – 17:45 Gaebler Measuring the Embodied Mind (M/B)	16:15 – 17:45 Kästner The Epistemology of (Cognitive) Neuroscience (M)	16:15 – 17:45 Coelho Mollo Tutorial: Philosophy of Mind

## **Mandatory Lectures:**

*Monday 9:30 – 11:00*

*start: 13 April 2015*

*Language and the Brain*

*Prof. Dr. Manfred Krifka (Institut für deutsche Sprache und Linguistik, HU Berlin) / Prof. Dr. Dr. Friedemann Pulvermüller (Institut für Deutsche und Niederländische Philologie, FU Berlin)*

*venue: Bernstein Center for Computational Neuroscience, Philippstraße 12, Haus 6, 10115 Berlin, Lecture Hall*

*Mind and Brain master and doctoral students and 10 students of the Department of Linguistics at Humboldt-Universität **only!***

Language has been investigated from a range of perspectives, rooted in diverse disciplines such as the humanities and philosophy, psychology, and neuroscience. These disciplines have focused on different aspects such as on language as a formal system relating sound to meaning, on the language-related behavior of humans and on how the language system is acquired, and on the ways how language is implemented in the brain. In this course we will outline the linguistic view of the architecture of this formal system, from phonology to syntax to semantics and pragmatics. We will introduce into the major psycholinguistic findings concerning the processing of language, such as the recognition of words, the parsing of sentences, and the computation of the intended meaning. And we will give an overview of what is known about the neural representation of language processing, including language disorders.

The tutorial will complement the course by discussing particular articles that investigate specific aspects of language-related behavior and its neural implementation, and that use a variety of experimental techniques. Together with the course, students will be familiarized with current research questions in the field of language and the brain, and in the current methods and paradigms to address these questions.

*Monday 11:15 – 15:00 (Mind Track)*

*start: 13 April 2015*

*Friday 10:00 – 13:15 (Brain Track)*

*start: 17 April 2015*

*Empirical Research Training*

*Prof. Dr. Isabel Dziobek (Institut für Psychologie, HU Berlin & Berlin School of Mind and Brain), Dr. Kristin Prehn (Charité -Universitätsmedizin Berlin)*

*venue: Invalidenstraße 110, 10115 Berlin, room 449*

*Mind and Brain students **only!***

In the empirical-experimental exercise students extend their basic knowledge of neurocognitive research methods gained in the research methods lecture and tutorial series and deepen their knowledge of theoretical principles and practical applications of neurocognitive methods. The

objective of the class is to familiarize students with experimental (as well as descriptive) research methods by providing "hands-on" experiences in designing, conducting, analyzing, interpreting, and writing up one experimental neurocognitive research study. The empirical-experimental exercise is concluded with a documented individual report on the empirical project following APA guidelines.

As a result of careful study and fulfillment of the course assignments, students should be able to:

1. Develop experimental research problems in cognitive neuroscience
2. Conduct reviews of the scientific literature relevant to a chosen research problem
3. Formulate research hypotheses
4. Design experimental neurocognitive studies
6. Execute experimental studies by collecting research data under carefully controlled conditions
7. Summarize and statistically analyze research data
8. Evaluate research results and draw conclusions pertaining to hypotheses
9. Communicate research studies in oral, written, and poster formats

Monday 15:30 – 17:00

start: 13 April 2015

*Basic Philosophical Concepts and Philosophy of Mind*

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

*venue: Bernstein Center for Computational Neuroscience, Philippstraße 12, Haus 6, 10115 Berlin, Lecture Hall*

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.

## **Mandatory Tutorials**

Wednesday 10:00 – 11:30

start: 15 April 2015

*Tutorial: Cognitive Neuroscience*

*Dr. Sophie Herbst (Max-Planck-Institut für Kognitions- und Neurowissenschaften, Leipzig)*

*venue: Invalidenstraße 110, 10115 Berlin, room 449*

*Mind and Brain students **only!***

Building on the basic knowledge acquired in the lecture, this tutorial focuses on recent issues in the field of Cognitive Neuroscience.

We will discuss new findings that support or challenge classical views on human cognitive processing, e.g. in the domains of perception, attention, memory or learning. Throughout the course students will deepen their knowledge about core neuroscientific topics and methods and at the same time practice how to efficiently read and interpret neuroscientific literature.

Wednesday 12:15 – 13:45

start: 15 April 2015

*Tutorial: Language and the Brain*

*Malte Schomers (Berlin School of Mind and Brain)*

*venue: Invalidenstraße 110, 10115 Berlin, room 449*

*Mind and Brain students **only!***

Friday 14:15 – 15:45

start: 17 April 2015

*Tutorial: Ethics and Neuroscience*

*Simon Gaus (Institut für Philosophie, HU Berlin)*

*venue: Invalidenstraße 110, 10115 Berlin, room 449*

*Mind and Brain students **only!***

The course will be concerned with three related fields at the intersection of neuroscience and philosophical ethics that comprise what has come to be known as *Neuroethics*. We will engage, firstly, with a number of concrete ethical questions that arise as a consequence of advances in neuroscience, such as whether neural enhancements are morally permissible and whether courts

should have the power to order CNS-interventions. Going beyond questions of applied ethics, we will, second, take a closer look at potential implications of neuroscientific findings for certain apparent presuppositions of everyday moral thinking, in particular the impact of neuroscientific findings on whether human beings have free will and are morally responsible for their actions. The third major theme of the course will be attempts to use neuroscientific findings as a basis for arguments for certain *metaethical* positions, i.e. positions on how to make sense of what we are doing when we make moral judgements and engage in moral debates.

*Introductory Literature:*

Farah, Martha J. (2002), Emerging Ethical Issues in Neuroscience, *Nature Neuroscience*, 5: 1123-1129.

Roskies, A.L. (2002), Neuroethics for the New Millenium, *Neuron*, 35:21-23.

Levy, N. (2012), Neuroethics. *WIREs Cogn Sci*, 3: 143–151

Friday 16:15 – 17:45

start: 17 April 2015

*Tutorial: Philosophy of Mind*

*Dimitri Coelho Mollo (Institut für Philosophie, HU Berlin)*

*venue: Invalidenstraße 110, 10115 Berlin, room 449*

*Mind and Brain students **only!***

## ***Elective Courses:***

### *Focus MIND*

*Tuesday 10:15 – 11:45*

start: 14 April 2015

*Experimental Psychopathology and Psychotherapy*

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

*venue: Invalidenstraße 110, 10115 Berlin, room 449*

### *MIND/BRAIN*

This is a course about the scientific study of mental disorders and mechanisms of psychotherapeutic change. It will focus on conceptual foundations for the study and treatment of major mental disorders (e.g. depression, anxiety disorders, schizophrenia, autism) as well as the methodological issues that follow from their consideration. The overall goal of the course is to promote critical thinking and to foster the development of adept researchers in the field of clinical cognitive neuroscience. The course includes among others the study of the historical contexts of abnormal behavior; current diagnostic criteria for psychopathology and examination of theory regarding psychopathology; etiologies, prevalence rates, and treatment approaches for psychological disorders as well as novel research in experimental psychopathology.

By the end of this course, students should have mastered the following:

1. Have an overview of the field of abnormal psychology and major psychological problems and disorders (including using the ICD- and DSM-based classification systems)
2. appreciate multiple causes of psychopathology
3. Have a basic conceptual foundation for the etiology of specific psychological disorders as viewed from a number of theoretical perspectives, as well as how the etiology may relate to treatment of the disorder.
4. elucidate both the strengths and weaknesses of the current diagnosis system.
5. Be sensitive to the cultural differences that exist in regard to the conceptualization and presentation of mental disorders.
6. Have knowledge of the implementation of empirical supporting of psychological intervention types.

Tuesday 12:15 – 13:45 (*nota bene: new time!*)

start: 14 April 2015

*Progress in Brain Language Research*

*Prof. Dr. Dr. Friedemann Pulvermüller (FU Berlin)*

*Freie Universität Berlin, Habelschwerdter Allee 45, 14195 Berlin, room: JK 31/122*

*MIND/BRAIN*

This research seminar focuses on reviewing and discussing recent progress in the cognitive neuroscience of language. It has three main strands. 1) External speakers will set the stage for focused discussions. 2) In depth reviews of research publications will provide a insight into recent progress in specific research areas. 3) Participants and researchers at the FU Berlin's Brain Language Laboratory will present their own research plans and aspects of their ongoing research to open discussion of future research perspectives.

Hot topics that may form the seminar's foci in the new semester include the neural manifestations of linguistic-pragmatic knowledge and processing, the neuroanatomy of the 'language brain', and putative neurophysiological indexes of language understanding.

*Recommended reading:*

Hagoort, P., & Levinson, S. C. (2014). Neuropragmatics. In M. S. Gazzaniga & G. R. Mangun (Eds.), *The cognitive neurosciences* (pp. 667-674). Boston, MA: MIT Press.

Pulvermüller, F. (2013). How neurons make meaning: Brain mechanisms for embodied and abstract-symbolic semantics. *Trends in Cognitive Sciences*, 17(9), 458-470. doi: 10.1016/j.tics.2013.06.004

Rilling, J. K. (2014). Comparative primate neuroimaging: insights into human brain evolution. *Trends in Cognitive Sciences*, 18(1), 46-55.

Tuesday 14:15 – 15:45

start: 14 April 2015

*Explaining Human Behaviour: Nature vs Nurture*

*Dr. Richard Moore (Berlin School of Mind and Brain / Institute of Philosophy, HU Berlin)*

*venue: Dorotheenstraße 24, 10117 Berlin, room 1.406*

*MIND*

*12 Mind and Brain students*

What explains human behaviour, and the apparent differences in behaviour between different populations of humans? Is it our genetic inheritance ('nature'), or the environment in which we are raised ('nurture')?

A recent book – *A Troublesome Inheritance*, by the journalist Nicholas Wade – reignited this longstanding debate by suggesting that differences between human populations may be the result of

genetic selection. In a subsequent letter to the New York Times, more than 130 high-profile geneticists disavowed this claim on the grounds that there are no meaningful genetic differences between human sub-populations. But how much of human behaviour is explained by nature, and how much by nurture? Is there such a thing as human nature? And does the nature-nurture distinction even make sense?

In this course, we will explore a number of questions relating to the nature-nurture debate. We'll start by undertaking a close reading of Evelyn Fox Keller's *The Mirage of a Space Between Nature and Nurture*, in which she argues that the nature-nurture debate is "riddled with incoherence". Having used this as a starting point to clarify the conceptual foundations of the debate, we'll look at putative differences between different groups of humans, and the explanations that have been proffered for them. In the process we'll try to understand why scientists have so thoroughly rejected Wade's controversial claims.

Course readings will include:

Coop et al. (2014). Letters: 'A Troublesome Inheritance'. *The New York Times Book Review*.

Haslanger, S. (2000). Gender and race: (What) are they? (What) do we want them to Be? *Noûs*, 34(1), 31-55.

Keller, E.F. (2010). *The Mirage of a Space Between Nature and Nurture*. Duke UP.

Wade, N. (2014). *A Troublesome Inheritance: Genes, Race and Human History*. Penguin.

*Tuesday 16:15 – 17:45*

*start: 14 April 2015*

*Cognitive Neuroscience of Music*

*Dr. Maria Herrojo Ruiz (Charité - Universitätsmedizin Berlin)*

*venue: Invalidenstraße 110, 10115 Berlin, room 449*

*MIND/BRAIN*

Over the past decade there has been a vast increase in research on music perception and performance as well as their correlates in the human brain. Some of the relevant cognitive processes investigated in this context include auditory processing, the processing of syntax and semantic meaning in music, emotional responses to music, music performance and brain plasticity, expectation and prediction during music perception, and interpersonal interactions.

In this seminar, we will review current findings from fMRI, MEG, EEG, and lesion studies that have investigated the cognitive systems underlying different aspects of human musical behavior. Special focus will be placed on experimental and modeling studies of the role of prediction and expectancy in music processing and production. In addition, we will critically discuss whether our current understanding of the systems involved in music cognition is sufficient to shed light on the functional origin and biological value of music. The course will consist of lectures and discussions.



### *Bibliography:*

Zatorre RJ, Chen JL, & Penhune VB. (2007). When the brain plays music: auditory-motor interactions in music perception and production. *Nature Reviews Neuroscience*, 8(7): 547-558.

Levitin, Daniel J., and Anna K. Tirovolas. (2009). Current advances in the cognitive neuroscience of music. *Annals of the New York Academy of Sciences*, 1156.1 : 211-231.

Koelsch S. (2011). Toward a neural basis of music perception—a review and updated model. *Frontiers in psychology*, 2: 110.

*Wednesday 16:15 – 17:45*

start: 15 April 2015

### *Measuring the Embodied Mind*

*Dr. Michael Gaebler (Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig)*

*venue: Invalidenstraße 110, 10115 Berlin, room 449*

### *MIND/BRAIN*

This seminar covers the joint role of body and brain in thinking and feeling from philosophical, psychological, physiological, and practical perspectives.

While the “cognitive turn” in the 1950’s emphasized the brain’s role for the human mind, the “affective turn” in the 1990’s extended the focus towards the rest of the body. It is now increasingly acknowledged that mental processes are *situated*, that is, that they are not only embodied but also interact with the natural, technological, and social environment. An *embodied, embedded, extended, and enactive* approach thereby promises to fill the gaps between the brain and the mind that cognitivism alone could not fill.

But how can we measure the mind and its physiology – in the brain and in the rest of the body? While brain activity is commonly acquired in restricted and artificial laboratory settings, physiological parameters in the rest of the body can be assessed in more complex (ideally: real-world) environments.

We will try to connect conceptual approaches via psychological and physiological processes to “hands-on” data acquisition and analysis (using basic statistical programming with R). We will read and discuss recent papers leading to the formulation of research questions that we can answer by analysing the data we have acquired.

Thursday 10:15 – 11:45

start: 23 April 2015

*Introduction to the Philosophy of Science*

*Dr. Lena Kästner (Berlin School of Mind and Brain)*

*venue: Invalidenstraße 110, 10115 Berlin, room 449*

*MIND*

What is an explanation? When is it successful? How do scientists come up with explanations? What role do laws of nature play in this context? What kinds of statements can be considered laws of nature in the first place? What kinds of entities should figure in scientific explanations? What is the relation between higher-level (e.g. mental) entities studied by special sciences and lower-level entities (e.g. particles) studied by physicists? Do scientific experiments enable us to study what the world is really like? Do scientific explanations approximate an objective reality or truth?—All of these are typical questions for philosophers of science. In this seminar we will explore different views in philosophy of science by reading seminal papers from this field. Students' willingness to engage with formalisms and basic logic is presupposed.

Thursday 12:15 – 13:45

start: 16 April 2015

*Colloquium*

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

*venue: Invalidenstraße 110, 10115 Berlin, room 449*

Current research studies (Master theses, dissertations, research projects of the social cognition) from the field of cognitive neuroscience in general and social cognitive neuroscience and experimental psychopathology in particular will be presented and discussed in this research colloquium. Master students will gain insight in the various stages – and associated challenges - of the experiential research process, as well as get feedback regarding the planning, execution, and interpretation of their own experiential master theses.

Thursday 16:15 – 17:45

start: 23 April 2015

*The Epistemology of (Cognitive) Neuroscience*

*Dr. Lena Kästner (Berlin School of Mind and Brain)*

*venue: Invalidenstraße 110, 10115 Berlin, room 449*

*MIND*

This course explores the epistemology of neuroscience. It focuses on the question of how (cognitive) neuroscientists investigate and eventually explain phenomena such as learning, memory, language processing, emotions, ... We will be reading both (cognitive) neuroscience and philosophy of science texts to study how experiments are designed, how data are obtained and evaluated, how inferences are drawn from them, and how theories and explanations are eventually constructed. Basic knowledge of both empirical methods and analytic philosophy will be presupposed.

## *Focus BRAIN*

*Tuesday 12:15 – 13:45*

*start: 14 April 2015*

*Learning to see in an (un)predictable world*

*Dr. Maximilien Chaumon (Charité - Universitätsmedizin Berlin)*

*venue: Invalidenstraße 110, 10115 Berlin, room 449*

### *MIND/BRAIN*

In spite of our subjective intuition, seeing is not just creating an accurate representation of the outside world. Neither is our sense of vision first acquired during early life and then set in stone for the rest of it. Rather, the visual system creates subjective representations that are highly influenced by our knowledge and goals. These representations change to adapt to the context in which we find ourselves at all times.

In this seminar, we will see that visual perception is affected by the state of the observer, the surrounding sensory environment and its value, and that these effects are continuously updated to account for recent and remote experience.

Students will learn key concepts for understanding the effects of context in visual perception and representation. To what extent does visual context determine what we see? At what neural level does context affect visual representation? How do emotions and attention influence visual perception? How does experience guide visual behavior?

These questions will be addressed by reviewing key papers in the domain from the past 15 years, with a focus on neuroscientific and psychological approaches.

*Suggested reading:*

Bar, "Visual Objects in Context", Nature Reviews Neuroscience 2004

*Wednesday 14:15 – 15:45*

*start: 15 April 2015*

*Cognitive Deficits in Neurological Diseases*

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

*venue: Bonhoefferweg 2 (Studenteneingang), 10117 Berlin, Ebene 2, Seminarraum 26 (Bonhofferraum)*

### *MIND/BRAIN*

Almost all neurological diseases are associated with cognitive deficits, although frequently sensory or motor symptoms dominate the clinical presentation, e.g. in Parkinson's disease, multiple sclerosis or stroke. In this seminar, students will get to know the most common neurological diseases and their typical clinical manifestation with a specific focus on their distinct cognitive profiles. Recent studies investigating neural correlates of these cognitive deficits will be introduced. Students will learn about pathophysiological concepts and therapeutic strategies and whenever possible, patients will be invited to the classroom to report their symptoms and their view of the disease.

*Thursday 14:15 – 15:45*

*start: 16 April 2015*

*Structural and functional MRI analyses in neurological disorders*

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

*venue: Invalidenstraße 110, 10115 Berlin, room 449 and*

*Computer Pool BCCN, Institut für Biologie, Philippstr. 13, Haus 2, 10115 Berlin (at the following dates: 23 April, 7. May, 28 May, 11 June, 25 June, 9 July)*

**BRAIN**

*15 Mind and Brain students **only!***

The application of new neuroimaging techniques including voxel-based morphometry, cortical thickness analysis, volumetry of subcortical structures, diffusion tensor imaging analysis, and resting state functional MRI has dramatically increased our knowledge about neurological disorders. These new data not only help to better understand pathophysiological processes, but also enable clinicians to better predict treatment response and individual outcome of patients. The seminar will be split in alternating theoretical and practical sessions. In theoretical sessions, students will get to know the most frequent neurological disorders, learn about the new imaging techniques and their analyses, and interpret findings of these analyses in patients with neurological disorders. In practical sessions, students will perform imaging analyses of real patient data in the BCCN computer pool.

## **Block Courses:**

*Thursday – Saturday, 23 – 25 July 2015, 9:00 – 17:00*

*The Origins of Moral Thought*

*Dr. Richard Moore (Berlin School of Mind and Brain / Institute of Philosophy, HU Berlin), Dr. Jan Engelmann (Max-Planck-Institute for Evolutionary Anthropology, Leipzig)*

*venue: Dorotheenstraße 24, 10117 Berlin, room 1.406*

*MIND*

*15-20 Mind and Brain students*

Both humans and animals seem to feel empathy. For example, chimpanzees and humans alike seem to feel distress when confronted with the pain of others; and both take steps to help others to relieve that pain. However, only humans seem to live by moral norms, and to engage in moral reasoning. Presumably, at some point our early hominin ancestors underwent cognitive changes that made them able and motivated to hold others accountable for their morally relevant behaviour – but how and why did these changes come about? In this class, we will set out to develop an account of the cognitive developments that made possible the emergence of moral thinking in humans; of the selection pressures that would favour the emergence of morality in our ancestors; and of the development of moral thinking in human ontogeny. We'll also consider the question of whether evolutionary approaches to the study of moral development have implications for meta-ethics – for example, by bearing upon questions pertaining to moral realism, and to our knowledge of moral properties.

*Readings will be drawn from:*

De Waal, F. (2009). *Primates and Philosophers: How Morality Evolved*. Princeton, NJ: Princeton UP.

Kitcher, P. (2011). *The Ethical Project*. Cambridge, MA: Harvard UP.

Prinz, J. (2008). *The Emotional Construction of Morals*. Oxford, OUP.

Tomasello, M. (2015). *A Natural History of Human Morality*. Cambridge, MA: Harvard UP.

*Monday – Thursday, 27 – 30 July 2015, 9:00 – 15:00*

*Experimental Aesthetics.*

*Understanding aesthetic experiences through cognitive neuroscience*

*Dr. Ophelia Deroy (Senior Researcher, Centre for the Study of the Senses, London)*

*venue: Invalidenstraße 110, 10115 Berlin, room 449*

## *MIND*

Back in 1876, Fechner observed that, in the absence of empirical foundation, “all of our systems of philosophical aesthetics seem to me like mighty giants with feet of clay”(Fechner 1876/1998, p. 634). What has been achieved since?

The aim of this lecture series is to critically examine whether progress has been made to provide aesthetics with a more secure scientific basis. The focus will be not on understanding creativity or the production of works of art, but on aesthetic experiences of sensory objects, notably, but not exclusively, experiences of visual arts, music, dance and cinema.

The course will survey the results achieved in the field of experimental and neuro-aesthetics, and show that they need to be articulated to the results obtained in the philosophy and cognitive neuroscience of perception, especially multisensory perception.

The structure of the course will be in two parts: First, it starts by examining what experimental studies have taught us regarding the cognitive capacities central to aesthetics (i.e. aesthetic attention, imagination, and understanding). It will then move toward specific cases (human beauty, visual arts, music, audio-visual arts such as dance and cinema), stressing the relevance of philosophical tools and concepts to cognitive neuroscience. Specific art-forms will be examined through two key questions (1) the specificity challenge - can experimental methods capture what is specific to an aesthetic experience by contrast with any other experience involving the same sensory modality (or modalities) ? (2) the variability challenge - can experimental methods capture something of the variability of the objects generating these experiences, and of the individual differences in the responses to these objects?

### **Bibliography:**

- Chatterjee, A. (2014). Scientific aesthetics: Three steps forward. *British Journal of Psychology*, 105(4), 465-467.
- Currie, G. ; Kieran, M. ; Meskin, A. & Robson, J. (eds) (2014). *Aesthetics and the sciences of the mind*. Oxford : Oxford University Press
- Shimamura, A. P., & Palmer, S. E. (Eds.). (2012). *Aesthetic science: Connecting minds, brains, and experience*. Oxford University Press.
- Ishizu, T., & Zeki, S. (2014). A neurobiological enquiry into the origins of our experience of the sublime and beautiful. *Frontiers in human neuroscience*, 8.

*Tuesday – Thursday, 6 – 8 October 2015, 10:30 – 17:45*

*Advanced Class: Neuroplasticity*

*Prof. Dr. Arno Villringer, Dr. Patrick Ragert, Dr. Bernhard Sehm, Dr. Annette Horstmann, Dr. Marco Taubert, Dr. Pierre-Louis Bazin (all members of the Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig)*

*venue: Berlin School of Mind and Brain, Luisenstraße 56, 10117 Berlin, room 220*

**BRAIN**

This advanced class builds on the course content of the Mind and Brain lecture on neuroanatomy and neurophysiology. The advanced course aims at teaching different aspects of neuroplasticity, encompassing descriptions on a cellular level but emphasizing on human systems level research. The questions that will be tackled include: What is the relationship of neuroplasticity and learning? How can neuroplasticity be assessed and induced non-invasively in the living human brain? How does neuroplasticity evolve and change over the lifespan? What is the relevance of neuroplasticity in the emergence and treatment of neurological disorders?

For further information, please contact:

Dr Dirk Mende

Doctoral and Master's Program Coordinator

Berlin School of Mind and Brain

[mb-education@hu-berlin.de](mailto:mb-education@hu-berlin.de)