Course Guide – Master Cognitive Science

Summer 2019

Last update: 28.03.2019

030085 Experimental Philosophy… Meeting Time Update

New course revised version: PHILOSOPHY OF ATTENTION (030064)

Enrollment for Courses

Students in the first semester will be registered by the lecturers in the first session of each course. Advanced students (from the second semester on) are requested to register with the university's **VSPL**-system (info: vspl-support@rub.de) and should be aware of earlier VSPL-deadlines. Exceptions include the courses held by Wiskott and Schöner. Here, there will be **no VSPL-registration**, but a manual enrollment in the first session.

Please notice that one and the same course can only be used to be part of one module for each student. Double use of the same course is not allowed.

FIRST YEAR PROGRAM

C1. Social Cognition & Meta-Science

SEMINAR
PHENOMENAL INTENTIONALITY (030092)
PROF. TOBIAS SCHLICHT

TERM:	Summer 2019
MEETING TIME:	Tuesday, 10 – 12, first Meeting: 02.04.2019
ROOM:	GA 3/143
CP:	6

In the Philosophy of Mind, it is common to distinguish between intentional states such as beliefs and desires, and phenomenal states such as sensations like pain or color experiences. Intentional states are characterized by being directed at some object, event or state of affairs. Phenomenal states are characterized by a distinctive feeling, i.e. there is something that it is like to have them. While the current orthodoxy is to keep these kinds of mental states separate, some philosophers claim that in order to explain intentionality, we have to look for its source in phenomenal consciousness. The most fundamental kind of intentionality is thus phenomenal intentionality arising from consciousness, while all other intentionality is derived from it. In this seminar we discuss arguments for and objections against this position.
This seminar will be accompanied by a special workshop with Angela Mendelovici (University of Western Ontario, Canada) in the spring break 12-13 June, 2019). In the weeks before that, we discuss the book in weekly sessions while all students will have the opportunity to discuss the book's contents with the author at the two-day workshop.
Reading: A. Mendelovici: The phenomenal basis of intentionality. Oxford 2018.

C1.

Social Cognition & Meta-Science

SEMINAR

PHENOMENAL CONSCIOUSNESS AND INTENTIONALITY (030095)

DR. ANDREA PACE GIANNOTTA, PROF. TOBIAS SCHLICHT

TERM:	Summer 2019
MEETING TIME:	Friday, 10 – 12, first Meeting: 05.04.2019
ROOM:	GABF 04/358
CP:	6

Phenomenal consciousness and intentionality have often been considered as two aspects of the mind that can be investigated separately one from the other. Within this "separatist" approach, one can seek to account for the intentionality of the mind in naturalistic terms, e.g. in terms of causal or informational relations between mind and environment. On the contrary, phenomenal consciousness, i.e. the subjectively felt quality of experience, is taken to be a different aspect of mental life, and one that is not easily treatable in naturalistic terms.

In this seminar, we will discuss a growing body of literature that has recently challenged the clear separation between phenomenal consciousness and intentionality, thus questioning the prevalent separatist approach. We will analyse the arguments provided in support of the idea that intentionality is grounded on phenomenal consciousness, together with some connected issues, such as the role of phenomenal consciousness in the explanation of various cognitive phenomena (the phenomenology of belief, of desire, of action, etc.), the opposition between internalism and externalism about phenomenal contents, and the implications of the phenomenal intentionality theory on the quest for a naturalistic theory of the mind. We will also look at the points of contact between this contemporary debate and the phenomenological tradition that originated in the Brentano School and that anticipates some aspects of the phenomenal intentionality theory. A selection of papers will be communicated in class (papers by Bourget, Chalmers, Farkas, Horgan, Kriegel, Loar, Mendelovici, Nida-Rümelin, Pautz, Pitt, Siewert, Tienson).

Suggested reading: entries "Consciousness and Intentionality" and "Phenomenal Intentionality" in the Stanford Encyclopedia of Philosophy (https://plato.stanford.edu/entries/consciousness-intentionality/; https://plato.stanford.edu/entries/phenomenal-intentionality/).

C1.

Social Cognition & Meta-Science

SEMINAR

WHAT IS THE ARCHITECTURE OF THE MIND? RECENT PHILOSOPHICAL DEBATES IN LIGHT OF NEUROSCIENTIFIC FINDINGS (030091)

DR. REGINA E. FABRY

TERM:	Summer 2019
MEETING TIME:	Monday, 16 – 18, first Meeting: 01.04.2019
ROOM:	GA 04/187
CP:	6

How is the mind organised and how is it realised in the human brain? What neuro-functional architecture underlies mental processes? These questions are at the intersection of theoretical and empirical work in philosophy, psychology, and the neuro-cognitive sciences. The continuous development and refinement of answers to these questions are of great importance for our scientific understanding of a wide range of issues from consciousness to language processing and beyond.

This seminar has three goals: Firstly, it aims at providing an overview of traditional and recent philosophical accounts of the structural and functional organisation of the brain. Secondly, it will explore how these philosophical accounts bear on current empirical research programs. In particular, we will focus on reviewing recent empirical studies on consciousness and language processing from this philosophical perspective. Thirdly, the seminar will discuss the implications of these research paradigms for philosophical assumptions about the architecture of the mind.

In addition to active participation and careful preparation of the assigned readings, participants will be expected to give a presentation in English.

Suggested readings:

Anderson, M. L. (2010). Neural reuse: A fundamental organizational principle of the brain. Behavioral and Brain Sciences, 33(04), 245–266.

Bechtel, W., & Abrahamsen, A. (2002). Connectionism and the mind: Parallel processing, dynamics, and evolution in networks (2nd ed.). Malden, Mass.: Blackwell Publishing.

Patel, G. H., Kaplan, D. M., & Snyder, L. H. (2014). Topographic organization in the brain: Searching for general principles. Trends in Cognitive Sciences, 18(7), 351–363. https://doi.org/https://doi.org/10.1016/j.tics.2014.03.008

Robbins, P. (2017). Modularity of mind. In E. N. Zalta (Ed.), Stanford encyclopedia of philosophy.

Retrieved from https://plato.stanford.edu/archives/win2017/entries/modularity-mind/

C1.

Social Cognition & Meta-Science

SEMINAR

PHILOSOPHY, FICTION, AND NARRATIVE (030077)

DR. LUKE ROELOFS, PROF. TOBIAS SCHLICHT

TERM:	Summer 2019
MEETING TIME:	Thursday, 14 – 16, first Meeting: 04.04.2019
ROOM:	GA 03/46
CP:	6

This course examines a range of puzzling issues about our ability to imaginatively engage with fictional narratives.

The first section considers five puzzles about fiction:

1. the paradox of fictional emotions (why we feel emotional reactions to things we know are not real),
2. the paradox of tragedy (why we seek out and enjoy sad and distressing narratives),
3. the puzzle of imaginative desire (whether our engagement with fiction involves real desires or mere simulations of desire),
4. the puzzle of imaginative resistance (why we seem unwilling to imagine false moral claims, but are happy to imagine false factual claims),
5. the puzzle of truth in fiction (how it can make sense to distinguish true and false statements about a completely made-up fictional setting).

The second section examines how imaginative engagement with fiction resembles and differs from other forms of imaginative engagement, such as those involved in pretend-play, thought-experiments, counterfactual reasoning, and perspective-taking. We will consider how far these activities might engage the same mental capacities, and how far they engage different ones.

The final section examines uses philosophers have made of fictional narratives, including in accounts of personal identity (Schechtman), social cognition (Hutto), moral education (Nussbaum), or the overall value of one's life (Velleman)

C2. Perception & Action

LECTURE & EXERCISE

AUTONOMOUS ROBOTICS: ACTION, PERCEPTION, AND COGNITION (310501 & 310511)

PROF. GREGOR SCHÖNER

TERM:	Summer 2019
LECTURE:	Thursday, 14.15 – 16.00 (first meeting: 11.04.2019)
EXERCISE:	Thursday, 16.15 – 17.00 (first meeting: 11.04.2019)
ROOM:	NB 3/57
CP:	6

Neuroinformatics is concerned with the discovery of new solutions to technical problems of information processing. These solutions are sought based on analogies with nervous systems and the behaviour of organisms. This course focuses on three exemplary problems to illustrate this approach:
(a) Artificial action (autonomous robotics);
(b) Artificial perception (robot vision);
(c) Artificial cognition (simplest cognitive capabilities of autonomous robots such as decision making, memory, behavioural organization). The main methodological emphasis is on nonlinear dynamical systems' approaches and dynamic (neural) fields.

C2. Perception & Action

BLOCKSEMINAR

PHILOSOPHICAL PSYCHOLOGY: ACTION, PERCEPTION, AND METAREPRESENTATION (030100)

PROF. STEPHEN BUTTERFILL, PROF. TOBIAS SCHLICHT

TERM:	Summer 2019
MEETING TIME:	Monday April 1st – Friday April 5th, 9.30 – 15:00
ROOM:	GA 04/271
CP:	6

Philosophical investigation is indispensable for fully understanding many discoveries in the cognitive sciences, and for identifying new areas of investigation. Key questions include: Are any cognitive processes modular? Is a distinction such as that between implicit and explicit knowledge needed in explaining cognitive development? Are there distinct roles for intention and motor representation in explaining the purposiveness of action? How if it all do motor representations shape experiences of actions, one's own or others'? What is categorical perception and how is it related to phenomenology? Are there multiple systems for tracking others' actions, beliefs and other mental states? Can emotions or other mental phenomena be known by means of perceiving them? When two or more agents act together, in virtue of what can their actions have a collective goal? What is it for agents to act together cooperatively, or to be committed to do so?
Prof. Stephen Butterfill from the University of Warwick is joining us and will teach this seminar in his role as Visiting International Professor, funded by the Research School.

C2. Perception & Action

SEMINAR

BENCE NANAY ON PERCEPTION - STUDENTS MEET AUTHOR (030094)

PROF. PETER BRÖSSEL, DR. INSA R. LAWLER

TERM:	Summer 2019
MEETING TIME:	Tuesday 14 – 16, First Meeting: 02.04.2019 Special Meeting Times! See below.
ROOM:	GA 03/46
CP:	6

How is it possible to act on what you perceive? Bence Nanay argues that so-called pragmatic representations are the key link between our perceptional experiences and our actions. In this seminar, we will explore this and other elements of Bence Nanay's theory of perception and contrast it with alternative theories of perception. We won't discuss Nany's theory just among ourselves, but also with the author himself. The highlight of our seminar is a workshop on June 25, 2019 with Bence Nany, where the participants will present their critical comments on Nanay's theory, receive replies from him, and learn about future directions in the philosophy of perception. Participation in this workshop is crucial. Before the workshop, the critical comments will be prepared, peer-reviewed, presented in class, and revised. The comments are also the basis for the essay required to pass the class.

Please note the special meeting times (see below).

Zeit: 02.04.-14.05.19: 14:15-15:45 Uhr; 28.05.19: 14:15-15:00 Uhr; 18.06.19: 14.15-17:30 Uhr; 25.06.19: 12:00-19:30 Uhr; 02.07.19: 14:15-15:00 Uhr

Literature recommendations:

If possible, please acquire Bence Nanay's book "Between perception and action" in the paperback version (2013/2017, Oxford University Press). Additional literature will be announced in the first session.

C2.

Perception & Action

SEMINAR

IMPLICIT KNOWLEDGE AND KNOWING HOW (030097)

PROF. ALBERT NEWEN, DR. EVA-MARIA JUNG

TERM:	Summer 2019
MEETING TIME:	Thursday 14 – 16, First Meeting: 04.04.2019
ROOM:	GABF 04/511
CP:	6

During the last decades, philosophers and cognitive scientists have been refuting the idea that human knowledge is always explicit and theoretical, emphasizing the central role which practical and implicit cognition plays in our lives. Against this backdrop, the philosophical notions of knowing how and tacit or implicit knowledge get increasing attention. In the 1940s, Gilbert Ryle introduced the notion of knowing how, arguing that it cannot be reduced to propositional knowing that, but rather consists in certain dispositions to act. Almost at the same time, Michael Polanyi developed a theory about tacit knowledge. Polanyi argued that we know much more than we can tell and that every kind of knowledge involves implicit, and thereby personal, aspects. Especially Ryle's view has recently received much criticism. In the seminar, we will discuss Ryle's and Polanyi's theories as well as contemporary approaches to knowing how and implicit knowledge.

C2.

Perception & Action

SEMINAR

PERCEPTION, COGNITION AND THEIR INTERACTIONS: CAN KNOWLEDGE INFLUENCE WHAT WE PERCEIVE? (030090)

DR. FRANCESCO MARCHI

TERM:	Summer 2019
MEETING TIME:	Wednesday 14 – 16, First Meeting: 03.04.2019
ROOM:	GABF 04/358
CP:	6

In this seminar we explore the interactions between perception and cognition. We start by characterizing these two domains of the mind and, especially, why and how they may be kept apart. We examine how this issue has important consequences for several domains of cognitive science. Afterwards we discuss both empirical and theoretical literature on the interactions between the two, which can be subsumed under the broad label of "cognitive penetrability of perception". We evaluate whether evidence of top-down effects of cognition onto perception is convincing and what are the main theoretical and methodological worries in this line of research.

Suggested literature:

Dretske, Fred. 2015. "Perception versus Conception" Zeimbekis, John, and Athanassios Raftopoulos, eds. n.d. The Cognitive Penetrability of Perception. Oxford University Press. doi: 10.1093/acprof:oso/9780198738916.001.0001

Firestone, Chaz, and Brian J Scholl. 2014. "'Top-Down' Effects Where None Should Be Found: the El Greco Fallacy in Perception Research." Psychological Science 25 (1): 38–46. doi:10.1177/0956797613485092

Firestone, Chaz, and Brian J Scholl. 2015. "Cognition Does Not Affect Perception: Evaluating the Evidence for 'Top-Down' Effects.." Behavioral and Brain Sciences, July, 1–77. doi:10.1017/S0140525X15000965

Levin, Daniel T, and Mahzarin R Banaji. 2006. "Distortions in the Perceived Lightness of Faces: the Role of Race Categories.." Journal of Experimental Psychology: General 135 (4): 501–12. doi:10.1037/0096-3445.135.4.501

Macpherson, Fiona. 2012. "Cognitive Penetration of Colour Experience: Rethinking the Issue in Light of an Indirect Mechanism." Philosophy and Phenomenological Research 84 (1). Wiley Online Library: 24–62.

Pylyshyn, Zenon. 1999. "Is Vision Continuous with Cognition?: the Case for Cognitive Impenetrability of Visual Perception." Behavioral and Brain Sciences 22 (03). Cambridge Univ Press: 341–65.

C2.

Perception & Action

SEMINAR

PHILOSOPHY OF ATTENTION (030064)

DR. ALFREDO VERNAZZANI

TERM:	Summer 2019
TIME:	Thursday, 10 – 12 (first meeting: 04.04.2019)
ROOM:	GABF 04/358
CP:	6

Attention plays a central role in our mental lives. Think of such ordinary situations like being distracted by the sudden appearance of something in your visual field, or of when you are reading and someone calls your name, in both cases, such stimuli draw your attention and reorganize your mental activities. Attention is pervasive: it intersects with multiple perceptual capacities as well as with our thoughts, it plays a central role in consciousness and determines where our cognitive resources should be allocated.

According to Sebastian Watzl's recent book Structuring Mind (MIT Press 2017), the central role of attention is to prioritize or structure our consciousness. In this seminar, we will read and discuss Watzl's book. We will thereby gain a fresh perspective on the current state of the art about attention studies, integrating insights from psychology, neuroscience, and philosophy.

For a first introductory reading, students can consult Christopher Mole's online entry «Attention» in the Stanford Encyclopedia of Philosophy.

C3. Memory, Learning & Decision Making

LECTURE & EXERCISE

COMPUTATIONAL NEUROSCIENCE: VISION AND MEMORY (310504 & 310514)

PROF. LAURENZ WISKOTT

TERM:	Summer 2019
LECTURE:	Tuesday, 12 – 14, First Meeting: 02.04.2019
EXERCISE:	Tuesday, 9 – 10:30 preliminary meeting, exercise 10:30 – 12, First Meeting: 09.04.2018
ROOM:	NB 3/57 (both, lecture & exercise)
CP:	6

This lecture presents models of self-organization in neural systems, in particular addressing vision (receptive fields, neural maps, invariances, attention) and associative memory (Hopfield network).

C3.

Memory, Learning & Decision Making

SEMINAR

DISCOURSE IN EPISODIC MEMORY (310524)

PROF. SEN CHENG

TERM:	Summer 2019
MEETING TIME:	Monday, 14:00 – 16:00, First Meeting: 01.04.2019
ROOM:	NB 3/72
CP:	3

When we remember events from our lives, whether they are the once-in-a-lifetime or everyday kind, we use our episodic memory. Although a small region of the brain called the hippocampus was dentified to be important for episodic memories a long time ago, the nature and neural basis of episodic memory remain unclear. This class will employ a novel, highly interactive format to introduce the students to the cutting edge of the research into episodic memory. Students will be involved in choosing the literature discussed in class and discuss their views with an invited speaker who will also give a scientific talk.
Prerequisites: knowledge of learning and memory at bachelor level.
Requirements: 66% attendance, presentations, active participation
Max. 15 students

C3.

Memory, Learning & Decision Making

SEMINAR

MOTIVATED REASONING AND SELF-DECEPTION (030080)

FRANCESCO MARCHI

TERM:	Summer 2019
MEETING TIME:	Tuesday, 10 – 12, First Meeting: 02.04.2019
ROOM:	GABF 04/609
CP:	6

In this seminar we discuss irrational routes to belief acquisition and maintenance with a specific focus on motivational factors. Motivational factors typically include desires and emotion. We explore if and how such mental phenomena may affect reasoning processes. In the first part of the seminar we discuss rationality and belief acquisition. In the second part we focus on the phenomenon of Self-deception as a paradigmatic instance of motivated reasoning. According to several authors Self-deception is commonplace. However, the possibility of Self-deception poses serious philosophical problems because it is thought to lead to paradox and irrational belief formation. We examine these issues and some solutions proposed in the literature. During the seminar, we will also discuss whether or not motivated reasoning leading to the acquisition of false beliefs may have an adaptive function.

Suggested literature:

Audi, R. (2004). Theoretical Rationality: Its Sources, Structure and Scope. The Oxford Handbook of Rationality (pp. 17–44). Oxford University Press. DOI:10.1093/0195145399.003.0002

Lynch, K. (2012). On the “tension” inherent in self-deception. Philosophical Psychology, 25(3), 433–450. http://doi.org/10.1080/09515089.2011.622364

McKay, R. T., & Dennett, D. C. (2009). The evolution of misbelief. Behavioral and Brain Sciences, 32(6), 493–510– discussion 510–61. http://doi.org/10.1017/S0140525X09990975

Mele, A. R. (2001). Self-Deception Unmasked. Princeton University Press. (selected chapters)

Mele, A. R. (2004). Motivated Irrationality. The Oxford Handbook of Rationality (pp. 240–255). Oxford University Press. http://doi.org/10.1093/0195145399.003.0013

Michel, Christoph, and Albert Newen. 2010. “Self-Deception as Pseudo-Rational Regulation of Belief.” Consciousness and Cognition 19 (3): 731–44. doi:10.1016/j.concog.2010.06.019

Nelkin, D. K. (2002). Self–Deception, Motivation, and the Desire to Believe. Pacific Philosophical Quarterly, 83(4), 384–406. http://doi.org/10.1111/1468-0114.t01-1-00156

C3.

Memory, Learning & Decision Making

SEMINAR

MEMORY AND FORESIGHT:
MENTAL TIME TRAVEL INTO THE PAST AND THE FUTURE (030089)

PROF. MARKUS WERNING

TERM:	Summer 2019
MEETING TIME:	Thursday, 16 – 18, First Meeting: 04.04.2019
ROOM:	GA 04/187
CP:	6

Mental time travel is the capacity to mentally construct simulations of past and future scenarios. It has been regarded a crucial component of human episodic memory and foresight. Whether also non-human animals have the capacity of mental time travel is controversial. Some researchers even have suggested that mental time travel is a characteristic human capacity that distinguishes us from other animals.

Mental time travel has been studied in philosophy, psychology, neuroscience and in the domain of animal cognition. In this interdisciplinary seminar we will explore its role in episodic memory and foresight, the evolution of the capacity, its development in young children, its underlying brain mechanisms, as well as its potential links to consciousness, the self, and free will.

Aside from active participation, participants will be expected to give a presentation in English. Assistance regarding the English language will be provided.

Literature

Cheng, S., & Werning, M. (2016). What is Episodic Memory if it is a Natural Kind? Synthese, 193, 1345–1385.

Cheng, S., Werning, M., & Suddendorf, T. (2016). Dissociating memory traces and scenario construction in mental time travel. Neuroscience and Biobehavioral Reviews.

Michaelian, K. (2016). Mental Time Travel: Episodic Memory and Our Knowledge of the Personal Past. Cambrdige, MA: MIT Press.

Suddendorf, T., & Corballis, M. C. (2007). The evolution of foresight: What is mental time travel, and is it unique to humans? Behavioral and Brain Sciences, 30, 299–313.

C3.

Memory, Learning & Decision Making

SEMINAR

IMPLICIT KNOWLEDGE AND KNOWING HOW (030097)

DR. EVA-MARIA JUNG

TERM:	Summer 2019
MEETING TIME:	Thursday, 14 – 16, First Meeting: 04.04.2019
ROOM:	GA 04/511
CP:	6

During the last decades, philosophers and cognitive scientists have been refuting the idea that human knowledge is always explicit and theoretical, emphasizing the central role which practical and implicit cognition plays in our lives. Against this backdrop, the philosophical notions of knowing how and tacit or implicit knowledge get increasing attention. In the 1940s, Gilbert Ryle introduced the notion of knowing how, arguing that it cannot be reduced to propositional knowing that, but rather consists in certain dispositions to act. Almost at the same time, Michael Polanyi developed a theory about tacit knowledge. Polanyi argued that we know much more than we can tell and that every kind of knowledge involves implicit, and thereby personal, aspects. Especially Ryle's view has recently received much criticism. In the seminar, we will discuss Ryle's and Polanyi's theories as well as contemporary approaches to knowing how and implicit knowledge.

C4.

Language, Logic & Categories

SEMINAR

AN INTRODUCTION TO NON-CLASSICAL LOGIC (030084)

PROF. HITOSHI OMORI

TERM:	Summer 2019
MEETING TIME:	Monday, 16 – 18 (First Meeting: 01.04.2019)
ROOM:	GABF 04/358
CP:	6

Logic in the modern form took off by the contributions of logicians such as George Boole, Gottlob Frege, Bertrand Russell, and David Hilbert. Frege developed what is now known as classical logic in 1879, and soon after that various non-classical logics were developed based on various motivations and/or complaints on classical logic. The aim of this course is to introduce the variety of non-classical logics by using Graham Priest's text book "An Introduction to Non-Classical Logic: From If to Is". Following Priest, we will pay much of the attention on conditionals, that is `if ... then ... ' sentences. One of the goals will be to have a clear picture on different motivations, and how they are captured in different semantics. Lectures will not assume too much familiarity with technical aspect of various systems, but familiarity with basics of classical logic should be useful. Depending on the interests of the participants, some exercises will be included.

C4.

Language, Logic & Categories

SEMINAR

NON-STANDARD MODAL LOGICS (030101)

PROF. HITOSHI OMORI

TERM:	Summer 2019
MEETING TIME:	Wednesday, 16 – 18 (First Meeting: 03.04.2019)
ROOM:	GABF 04/356
CP:	6

Modal logics are logics that are capable of dealing with various modal notions, like necessity and possibility. The topic is as old as logic itself, that is we can already find logical treatments of modality in Aristotle. Moreover, there were already some discussions of modality after the birth of so-called classical logic in the end of the 19th century, but it was only after the invention of the possible world semantics by Saul Kripke that the research on modal logics gained a huge attention, not only from logicians and philosophers, but also from computer scientists and linguists. In fact, it is so popular that it even seems not possible to discuss various modalities without relying on Kripke's semantics! The aim of this course is to explore non-Kripkean treatments of modalities. More specifically, we will discuss the following three issues:

(i) Many-valued approaches to modalities;

(ii) Non-standard way of defining validities based on possible world semantics;

(iii) Alternative semantics for the well-known modal logics.

One of the goals will be to have a grasp of what has been said about modal semantics without possible world. Lectures will not assume too much familiarity with technical aspect of various systems, but familiarity with basics of classical logic should be useful. There will be a lot of open problems presented during the lectures which might be a suitable topic for BA or MA thesis.

C4.

Language, Logic & Categories

SEMINAR

HUMOR AND IRONY: PERSPECTIVES FROM PHILOSOPHY AND COGNITIVE SCIENCE (030101)

PROF. MARKUS WERNING

TERM:	Summer 2019
MEETING TIME:	Wednesday, 12 – 14 (First Meeting: 03.04.2019)
ROOM:	GA 04/187
CP:	6

Humor and irony are ubiquitous phenomena in our mental lives: we often refer to situations, persons, or states of affairs in humorous or ironical ways using language, drawings, gestures, and other modes of expression. For us, humor and irony are interesting because they result from a close interaction between linguistic, cognitive and emotional processes. Yet despite the importance and relevance of humor and irony, research in empirically informed philosophy and the cognitive sciences has only begun to understand these phenomena.

In the seminar we will provide an overview of the recent theoretical controversies and empirical findings and discuss the following questions: first, what is humor and how can it be understood from a cognitive science perspective? Second, how can irony be captured theoretically and how can it be studied empirically? Finally, how can we describe the relation between humor and irony?

The seminar will be co-taught with Dr. Regina Fabry. In addition to active participation and careful preparation of the assigned readings, participants will be expected to give a presentation in English. Assistance regarding the English language will be provided.

Literature:

Hurley, M., Dennett, D., and Adams, R. (2011). Inside Jokes: Using Humor to Reverse-engineer the Mind. MIT Press.

Vrticka, P., Black, J. M., & Reiss, A. L. (2013). The neural basis of humour processing. Nature Reviews Neuroscience, 14(12), 860–868.

Bryant, G. A. (2012). Is verbal irony special? Language and Linguistics Compass, 6(11), 673–685.

Gibbs, R. W., Bryant, G. A., & Colston, H. L. (2014). Where is the humor in verbal irony? Humor, 27(4), 575–595.

AM. Advanced Methods

Advanced methods are usually studied in the second semester. One exception is the "FMRI"-course which is only offered in the winter. Students who already have basic knowledge in cognitive neuroscience can choose to learn the "FMRI"-technique in the first semester. Necessary background: basic knowledge in cognitive neuroscience. The FMRI-seminar must be integrated into the course program during the first or the third semester; in the case you want to learn the FMRI –technique in the first semester, an individual application for the course is necessary: boris.suchan@rub.de.
The laboratory-class “Neural substrates of memory function” is a flexible whole day course that can be integrated whenever a student is free to do so; usually it only makes sense in the semester breaks.
Further advanced methods can be found in the program from the last summer semester on our webpage: http://www.ruhr-uni-bochum.de/philosophy/mcs/program_courses.html. They will again be offered in the upcoming summer semester.

AM1. Theory Formation and Conceptual Analysis

SEMINAR
COGNITION IN SIMPLE BIOLOGICAL SYSTEMS (030093)
PROF. TOBIAS SCHLICHT

TERM:	Summer 2019
MEETING TIME:	Thursday, 12 – 14, First Meeting: 04.04.2019
ROOM:	GA 3/143
CP:	6

We discuss recent work on cognitive phenomena in simple biological systems such as single celled organisms (e.g. bacteria) and plants. We will read texts from philosophers of mind and philosophers of biology and discuss whether there are good arguments for the claim that the behaviors exhibited by such simple systems count as cognitive, and if yes, how we should explain these cognitive capacities which may be alien from the cognitive phenomena we know from our own case.

A Reader with texts will be provided in the first session.

AM1.

Theory Formation and Conceptual Analysis

BLOCKSEMINAR

EXPERIMENTAL PHILOSOPHY AND QUESTIONS IN MORAL PHILOSOPHY AND PSYCHOLOGY (030085)

DR. PASCALE WILLEMSEN, KAROLINA PROCHOWNIK

TERM:	Summer 2019
MEETING TIME:	Preliminary meeting: 04.04., 16-18 Thursday, 18.07: 10-13 and 14-15:30 Friday, 19.07: 10-13 Monday, 22.07, 10-13 and 14-15:30 Tuesday, 23.07, 10-13 Wednesday, 24.07, 10-13
ROOM:	GABF 04/352
CP:	4/6

Moral philosophers are very much concerned with how people should or should not act, with what is right and wrong, with what is permissible or impermissible, or what it means to be a good, virtuous person. However, as everyday experience and research from psychology teach us, reality often does not conform to these normative theories. Many philosophers have reacted to this kind of empirical evidence by saying that there is a large gap between the ought and the is – an unfortunate fact that we probably have to live with.

However, a new group of interdisciplinary researchers has tried to systematically tie together moral philosophy and moral psychology. These people, often referred to as experimental philosophers, aim to understand why we make the moral judgments and decisions we make. They are fascinated by the gap between 'is' and 'ought', and they investigate what the underlying cognitive processes, folk assumptions and concepts are that affect moral cognition.

This seminar will introduce the interdisciplinary research method and tools of experimental philosophy as they are used to investigate questions in the intersection of moral philosophy and moral psychology. At the beginning of this course, we will engage with the method of experimental philosophy more generally, as experimental philosophy has not only informed debates about moral questions but also many other research areas. We will therefore introduce the method as it is applied to a variety of domains. We will introduce a couple of most important empirical tools that experimental philosophers have used, such as questionnaire studies, experiments, and corpus studies. We will also provide basic training in how to use online software for data collection (Qualtrics, MTurk) and data analysis (Excel, SPSS). We will apply these methods to three topics from moral philosophy. In the first session, we will jointly decide which topics we will cover. Some suggestions are: moral realism, happiness and wellbeing, moral motivation, moral responsibility, free will, and moral character.

Introductory session with general information about the seminar: Thursday, 04.04. 2019, 2-4.

During this session we will make a choice of up to three topics in moral philosophy and moral psychology to focus on during the seminar in July.

The seminar will presuppose a minimal understanding of statistics and experimental research, yet a bachelor's degree in psychology is not necessary at all. All students (including, among others, philosophers, psychologists, law students, and cognitive science students) are invited who have taken an introduction to statistics, experimental research, or who have taken either "Philosophical Thought Experiments and Experimental Philosophy", "Moral Psychology", or participated in the EXTRA colloquium in winter 18/19. If you don't meet these criteria but still want to participate, please contact us.

Literature: Preparatory texts will be determined in the first session

AM2.

Advanced Analysis of Language and Logic

LECTURE

EPISTEMIC LOGIC (030005)

PROF. HEINRICH WANSING

TERM:	Summer 2019
MEETING TIME:	Tuesday, 14 – 16, First Meeting: 02.04.2019
ROOM:	GABF 04/358
CP:	6

Epistemic Logic is the logic of operators such as “agent a knows that’’, “agent a believes that’’ (doxastic logic), “the group of agents G knows that”, and “it is common knowledge that”. Epistemic logic is or ought to be related to epistemology, the general philosophical theory of knowledge. In this introduction to epistemic logic we will first deal with some fundamental topics in epistemology, namely the problem of defining the notion of knowledge and approaches to the concept of epistemic justification. In a second step, the modal logic of knowledge and belief will be introduced. This approach is confronted with a number of problems referred to as problems of logical omniscience. In a third step, familiarity with the modal logic of knowledge will enable us to consider the so-called knowability paradox. This paradox has received much attention in the debate between realistic and anti-realistic conceptions of truth. Also, the notion of common knowledge will be introduced and discussed. Finally, the logical analysis of knowledge will be refined and brought in closer connection with general epistemology by considering so-call justification logics. These systems extend the logical analysis of knowledge by explicitly incorporating a formal representation of justification. We shall also look at dynamic epistemic logic, the study of modal logics of model change. Credits can be obtained by passing an oral examination or writing an essay.

AM2.

Advanced Analysis of Language and Logic

SEMINAR

ON GENTLE MURDERERS AND DROWNING TWINS: DEONTIC LOGIC AND NORMATIVE REASONING (030099)

JUN. PROF. CHRISTIAN STRAßER

TERM:	Summer 2019
MEETING TIME:	Tuesday, 12 – 14, First Meeting: 02.04.2019
ROOM:	GABF 04/516
CP:	4/6

Deontic logic offers a formal model of reasoning with normative notions such as obligations and permissions. It forms a subclass of modal logic. Its applications are far-reaching, from ethics to computer science and artificial intelligence to legal reasoning.

In this course we start off with standard deontic logic. This system has the virtue of simplicity but it has severe limitations. One such limitation concerns the handling of normative conflicts (for instance, when you make two promises that you cannot both fulfill), another one concerns conditional norms (for instance, think of a sign which says "Parents are allowed only if accompanied by children"). Therefore, we will study several central alternative systems that were devised to tackle these and other problems, such as input/output logic, defeasible deontic logic, default logic, deontic STIT-logic, formal argumentation, etc.

For the seminar previous knowledge of modal logic does not hurt but is in no way required. Nevertheless, a basic understanding of propositional logic is advised. Exercises will be discussed at the beginning of every session.

The content of the course has quite some cross-fertilizing potential since many formal methods to be discussed can also be found in other applications of logic. For instance: (i) Participants have the opportunity to familiarize themselves with central methods in modal logic which form the basis of many other philosophically relevant formalisms such as epistemic and temporal logic. (ii) Many systems of deontic logic handle conflicting information and give rise to non-monotonic behavior. In this sense deontic logics offer a showcase of methods that play an essential role in (non-deductive) defeasible reasoning.

AM3

Behaviour Studies & Data Analysis

BLOCKSEMINAR

COGNITIVE DEVELOPMENT (112350)

PROF. RACHEL BARR

TERM:	Summer 2019
TIME & ROOM:	11.05., 10 – 18 (IA 1/157) & 18.05., 10 – 18 (IA 1/161) & 01.06., 10 – 18 (IA 1/157)
CP:	3

Only 5 students; apply via E-Mail: hilfskraefte-newen@rub.de

This course covers fundamental principles and processes of cognitive development. The focus this semester will be on early cognitive development. Students will learn about cognitive development with special attention paid to the development of memory, attention, language, problem-solving and executive functioning skills more broadly. Material covered will address both normative and atypical development. Additionally, the roles that both biology and environmental context play will be featured. There will be a research module component to the coursework and the course will be offered in weekend workshops. Please note that the course will be taught in English. However, students can choose to give their presentations (Referate) in either German or English.

AM3

Behavior Studies & Data Analysis

SEMINAR

DATA MINING IN PSYCHOLOGY (118920)

FARIBA SHARIFIAN

TERM:	Summer 2019
MEETING TIME:	Thursday, 14 – 16 (First Meeting: 04.04.2019)
ROOM:	IA 02/445
CP:	3

Max. 5 Students accepted! Please apply early.

This course will cover conceptual bases of data mining. It includes an introduction of common techniques and software for the analysis of mainly psychological data. These techniques enable us to find complex patterns in large amounts of data using intelligent methods. Data mining techniques deal efficiently with noisy, uncertain, or missing data (which is usually the case in empirical data) and try to discover only useful and interesting knowledge. Data mining techniques mainly include, anomaly and outlier detection, classification, clustering, learning of association and regression. The participants need to complete one data analysis exercise as a homework. The course will be held in English.

Topics:
o Introduction to Data Mining
o Data Issues
o Data Preprocessing
o Regression
o Classification
o Association Analysis
o Clustering
o Visualization
o Anomaly Detection
o Sample of psychology and clinical applications

Evaluation:
o Final homework exercise: 100% of the grade

Prerequisites:
Students need to be able to follow the overall logic of the data mining algorithms (without going to detailed programming) and have very basic Matlab skill (for example how to run a code, upload a data set, define a matrix, ...). Then, during the course they will learn how to modify relevant parameters of the codes to optimize it for a specific question. Each student can choose to follow the course with one of these two different strategies: 1) follow the general examples that I provide for each algorithm and at the end do a 'general Homework' for the final grade. 2) Bring own data set (for example a data set that can be a part of his/ her master thesis later) and apply all data mining algorithms on his/her own data set. Also, I will define a personalized homework on their own data set for the final grade.

AM4.

Computational Modeling

LECTURE & EXERCISE

MATHEMATICS FOR MODELING AND DATA ANALYSIS (310503 & 310513)

PROF. LAURENZ WISKOTT

TERM:	Summer 2019
LECTURE:	Thursday, 12 – 14, First Meeting: 04.04.2019
EXERCISE:	Thursday, 9:00 – 10:30 preliminary meeting, 10:30 – 12:00 exercise, First Meeting: 11.04.2019
ROOM:	NB 3/57
CP:	6

This course covers mathematical methods that are relevant for modeling and data analysis. Particular emphasis will be put on an intuitive understanding as is required for a creative command of mathematics. The following topics will be covered: Functions, Hilbert-Spaces, matrices as, transformations, systems of linear differential equations, qualitative analysis of nonlinear differential equations, Bayes theory, multiple integrals.

AM4. Computational Modeling

SEMINAR

PROGRAMMIEREN IN MATLAB / PROGRAMMING IN MATLAB (118155)

DR. ROLAND PUSCH

TERM:	Summer 2019
MEETING TIME:	Thursday, 16:00-18:00, First Meeting: 04.04.2019
ROOM:	IB 02/109 PC-POOL
CP:	t.b.a.

This course will be held in German language, but there will be a **second group in English language**, if there are enough interested students. So if you would like that to happen, please apply early.

In dem Projektseminar nehmen die Studierenden an einem Forschungsprojekt teil und gewinnen einen Einblick in die Versuchsdurchführung, Datenanalyse und -interpretation. Im Vordergrund steht dabei die Einführung in die Programmierung mit Matlab, die in wöchentlichen Sitzungen stattfindet und von zeitintensiven Hausaufgaben begleitet wird. In den Seminarsitzungen werden die Studierenden eigene Versuche entwerfen, programmieren und durchführen. Die erhobenen Daten werden die Studierenden mit ihren neu gewonnenen Programmierkenntnissen in Matlab auswerten. In einem separaten Blocktermin wird das Projekt inhaltlich erarbeitet. Am Ende werden alle drei Aufgabenbereiche in einem Bericht zusammenlaufen, in dem die inhaltlichen Aspekte des Projekts, die erhobenen Daten und deren Auswertung beschrieben werden.
Rückfragen bitte an: roland.pusch@rub.de/jonas.rose@rub.de Raum: Medienraum GAFO 04/615 Do, 16.00 - 18.00, plus Blockveranstaltung (am Wochenende)

AM5.

Special Methods in Neuroscience/Genetics

BLOCKSEMINAR

NEUROMODULATION OF COGNITION (118910)

DR. OLIVER T. WOLF, LORENZA COLZATO

TERM:	Summer 2019
MEETING TIME:	07.06., 14 – 18; 29.06., 09 – 18; 30.06., 09 – 17
ROOM:	IA 1/87
CP:	T.B.A.

This course is intended to review and discuss state-of-the-art developments in neuromodulation of cognition, covering issues like neurotransmitters (dopamine, serotonin, GABA and noradrenaline) and brain simulation (transcutaneous vagus nerve stimulation and transcranial direct current stimulation) . The final grade will be based on individual student presentation, writing a scientific blog (example: http://www.libcblog.nl/articles/vitamin-b-supplementation-against-dementia-and-cognitive-decline). The best blog will be published online. The course will be given as a block course over one weekend and will be awarded with 3 ECTS credits. The course language is English.

Bibliography: Colzato, L.S. (2017). Theory-Driven Approaches to Cognitive Enhancement. New York: Springer

AM5.

Special Methods in Neuroscience/Genetics

BLOCKSEMINAR
NEUROEPIGENETICS (118161) (IN ENGLISH)
DR. VANESSA LUX

TERM:	SUMMER 2019
MEETING:	DO. 11.04.12 – 14: IB 02/135 & SO 21.04. 9 – 17: IAFO 02/460
CP:	T.B.A..

Neuroepigentics studies epigenetic modifications in neuronal cells. First evidence indicates that epigenetic mechanisms regulating neuronal cell expression contribute to cell differentiation, brain development, learning, and memory. Students will get familiar with the most studied epigenetic mechanisms (DNA methylation, histone modifications, and RNA inteference) and underlying models of gene-environment interaction. We will look into hot topics in developmental neurobiology, memory research, learning, and stress research, and learn about first findings. Moreover, we will discuss possibilities and limits of neuroepigenetics and its methods (molecular analyses, animal models, peripheral biomarkers) for psychological research questions. As an add-on, participants will learn strategies how to read and evaluate research papers efficiently. The course is taught in English.

AM6. EEG-training

SEMINAR & PRACTICAL COURSE
ANGEWANDTE NEUROPSYCHOLOGISCHE METHODEN / ADVANCED EEG-ANALYSIS (118157, 118158)
PROF. NIKOLAI AXMACHER, PROF. BORIS SUCHAN

TERM:	Summer 2019
SEMINAR 1 & LAB:	04.05.19 + 05.05.19 09.00 – 17.00 IA 02/460 06.07.19 + 07.07.19 09.00 – 17.00 IA 02/460 Preliminary meeting: 05.04.2019, 14-16!
CP:	6
SEMINAR 2:	Monday, 10:00 – 12:00 **<IN GERMAN>,** First Meeting: 01.04.2019, IA 02/461
CP:	3

Dear students,

concerning EEG-courses, please make early decisions and contact the lecturers running the courses: Please notice the entry conditions of the courses.

There are three levels with which you can study the EEG-method.

1. For German speaking students: If you want to be intensely informed about EEG method but do not plan to use it for the master thesis project, then it is recommended that you participate in seminar 2 only.

2. If you plan to use EEG-methods for your master thesis project, then you are supposed to participate in the following package of seminar and laboratory course, i.e. at least seminar 1 (offered by Prof. Axmacher/Hucke/Barth) and laboratory course (offered by /Prof. Axmacher/Hucke/Barth)

3. You may specialize very intensely in EEG-methods, then you can combine all three courses.

Seminar 1: "Angewandte neuropsychologische Methoden EEG" (118153) Hucke

The seminar course stands in direct relation to the laboratory course with the same name (also 2 SWS). Participation in both modules is mandatory.

The goal is to relay the ability to develop further research questions in cognitive neuroscience based on published neuropsychological literature, and to develop, independently conduct, and analyze studies corresponding to these research questions. An additional goal is to acquire the ability to present the results in writing corresponding to the standards of neuroscientific journals. The course will be held in English.

Laboratory Course: “Angewandte neuropsychologische Methoden EEG” (118157) Hucke

The laboratory course stands in direct relation to the seminar course with the same name (also 2 SWS). Participation in both modules is mandatory.

The goal is to relay the ability to develop further research questions in cognitive neuroscience based on published neuropsychological literature, and to develop, independently conduct, and analyze studies corresponding to these research questions. An additional goal is to acquire the ability to present the results in writing corresponding to the standards of neuroscientific journals. The course will be held in English.

Seminar 2: „Ereigniskorrelierte Potentiale in der Neuropsychologie“ (118151) <IN GERMAN> Prof. Dr. Boris Suchan, Monday, 10:00 – 12:00, First Meeting: 01.04.19, Room IA 02/461

Das Seminar beschäftigt sich mit der Technik des Elektroenzephalogramms und den ereigniskorrelierten Potentialen. Diese Methode ist in der Neuropsychologie sowohl in Forschung als auch in der klinischen Anwendung sehr wichtig. Im Seminar werden alle wichtigen Paradigmen vorgestellt und diskutiert. Ebenfalls werden praktische Übungen im Labor durchgeführt. Eine Literaturliste wird zu Beginn des Seminars verteilt.

I. Free Selection

Please notice that under the category "free selection" we only describe courses which are in German as additional offers. For the German speakers please notice that you are only allowed to have maximally three courses in German in the whole program. For all students including the English speaking students the following rule holds: All courses of the whole program can also be accepted in the module free selection, i.e. if you have completed (or you have a clear plan how to complete) the obligatory modules, you can choose whatever course supports you best to realize the optimal master thesis. Furthermore, we can in principle accept also internships up to 10 credit points in the category of free selection. The internship must of course be equivalent to the number of credit points and it must be an internship that is proven to qualify for the program "Cognitive Science" and ideally supports the master thesis. If you aim to use an internship as a way to complete a part of this module then please contact Dr. Brössel or Prof. Newen in advance.

D1.

Free Selection

VORLESUNG
KOGNITION UND GEHIRN (112611)
PROF. OLIVER WOLF

TERM:	Summer 2019
MEETING TIME:	Monday, 14.00 – 16.00, First Meeting: 01.04.2019
ROOM:	HGA 30
CP:	t.b.a.

Die Vorlesung bietet einen Überblick über Befunde und Theorien zu aktuellen Themen der kognitiven Neurowissenschaft. Die Vorlesung setzt Grundkenntnisse der Kognitionspsychologie und der Biopsychologie voraus. Kenntnisse aus dieser Vorlesung werden im Master Studiengang Psychologie und Kognitive Neurowissenschaft vorausgesetzt.

D1.

Free Selection

SEMINAR
JOURNAL CLUB (118915)
ANNE BIERBRAUER

TERM:	Summer 2019
MEETING TIME:	Thursday, 16 – 18, First Meeting: 04.04.2019
ROOM:	IB 02/139
CP:	t.b.a.

In Analogie zu den Kognitiven Neurowissenschaften - der Untersuchung der neuronalen Korrelate kognitiver Prozesse - wurden in den letzten Jahren auch Konzepte der Psychoanalyse mit bildgebenden Methoden untersucht. Dieses Seminar vermittelt einen Überblick über diese Studien. Dabei werden aktuelle Untersuchungen zu zentralen psychoanalytischen Konzepten (Verdrängung, Konversion, Träume, Traumatisierung...), aber auch Studien zu den Mechanismen der psychodynamischen Psychotherapie sowie psychodynamische Konzeptualisierungen neuropsychologischer Symptome vorgestellt und diskutiert.

D1.

Free Selection

LECTURE

EVOLUTION UND EMOTION (112251)

PROF. ONUR GÜNTÜRKÜN

TERM:	Summer 2019
MEETING TIME:	Thursday, 16.00 – 18.00, First Meeting: 04.04.2019
ROOM:	HIA
CP:	3

Wie verlief bisher die Geschichte des Lebens? Innerhalb welchen Gesamtszenarios bettet sich die Entstehung des Menschen ein und welche Anteile unseres heutigen Denkens, Handelns und Fühlens reflektieren die Gesetzmäßigkeiten, die bei der Phylogenese unseres Gehirns wirksam waren? Wie determiniert die Interaktion von Umweltfaktoren und genetischer Anlage unsere Entwicklung? Um solche Fragen beantworten zu können, müssen wir die Evolutionstheorie mit allen ihren Implikationen kennenlernen. In der Vorlesung sollen folgende Themen behandelt werden: 1) Mechanismen der Genetik und Epigenetik 2) Verhaltensgenetik. 3)Entwicklung des Lebens und des Menschen. 4) Emotionsmechanismen. 5) Soziobiologie.

D1.

Free Selection

LECTURE
BIOPSYCHOLOGIE (112631)
PROF. ONUR GÜNTÜRKÜN

TERM:	Summer 2019
MEETING TIME:	Thursday, 12.00 – 14.00, First Meeting: 04.04.2019
ROOM:	IAFO 02/461
CP:	3

Das Wissen um Hirnaufbau und Hirnfunktion ist die Grundlage für das Verstehen sämtlicher bio- und neuropsychologischer Fragestellungen. In dieser Vorlesung wollen wir uns exemplarisch das Sehsystem des Menschen vornehmen. Wir wollen seine Funktionen verstehen, indem wir die Anatomie und Physiologie des Sehsystems kennenlernen und neuropsychologische Ausfälle anschauen. Danach wollen wir kennenlernen, wie die visuelle Information in die Prozesse des präfrontalen Cortex integriert wird, so dass die Fähigkeit zum Behalten, Planen und Handeln entsteht. Kurz gesagt, wollen wir die neuralen Grundlagen des Wahrnehmens und Erkennens kennenlernen.

Literatur:
Onur Güntürkün, Biopsychologie, Hogrefe Verlag 2012, Kapitel 5 - 12
Bekanntgabe weiterer aktueller Literatur während der Veranstaltung und über Blackboard.

D1.

Free Selection

SEMINAR
PSYCHIATRISCHE GENETIK UND EPIGENETIK (118162)
PROF. ROBERT KUMSTA

TERM:	Summer 2019
MEETING TIME:	Wednesday, 14.00 – 16.00, First Meeting: 03.04.2019
ROOM:	IAFO 02/561
CP:	3

Only 2 people may join. If you are interested, please send an application directly to Robert Kumsta: *Robert.Kumsta@rub.de.*

In diesem Seminar wird über aktuelle Forschungsergebnisse aus der molekularen Verhaltensgenetik diskutiert. Im Fokus stehen dabei Befunde der psychiatrischen Genetik, sowie Ergebnisse zu Gen-

Umwelt-Interaktionen, Genexpression und der Epigenetik. Beispielsweise wird die Frage nach den Mechanismen behandelt, wie sich frühe Umweltfaktoren „biologisch festschreiben"" (biological embedding of experience), und welche Rolle dabei epigenetische Prozesse spielen. Außerdem wird der Nutzen von Biomarkern besprochen. Die genaue Auswahl der Literatur findet in Absprache mit den

Teilnehmern statt. Aktuelle Publikationen werden besprochen und methodenkritisch analysiert.

D1.

Free Selection

SEMINAR

KOMPARATIVE KOGNITION (112612)

JULIAN PACKHEISER, CAROLINE SCHLÜTER, GESA BERRETZ

TERM:	Summer 2019
MEETING TIME:	Thursday, 10 – 12, first Meeting: 04.04.2019
ROOM:	IB 02/135
CP:	3

Die Evolution hat im Laufe der Zeit eine Vielzahl unterschiedlicher Lebewesen hervorgebracht. Von allen Arten die heute auf diesem Planeten leben, scheint der Mensch aufgrund seiner kognitiven Fähigkeiten eine Sonderstellung im Tierreich einzunehmen. Zu diesen Fertigkeiten gehören unter anderem Sprache, Problemlösen sowie das episodische Gedächtnis. Wie auch physische Merkmale, unterliegen kognitive Funktionen dem Evolutionsprozess und haben sich im Laufe der Zeit und unter Einfluss von Umweltfaktoren herausgebildet. Insofern ist der Vergleich zwischen den Hirnleistungen von humanen und non-humanen Lebewesen besonders aufschlussreich, um die Frage nach den notwendigen neuroanatomischen Strukturen für eine spezifische Funktionsdomäne zu klären.
Die zentrale Fragestellung wird innerhalb des Seminares auf Grundlage von komparativen Studien von den Studierenden in Kurzreferaten erarbeitet. Hierbei steht der Vergleich zwischen Säugern und Vögeln im Fokus und wird anschließend im wissenschaftlichen Diskurs weiter vertieft. Abschließend findet eine Posterpräsentation statt, in der die Inhalte des Seminares noch einmal zusammengefasst werden sollen.

D1.

Free Selection

SEMINAR
LERNEN UND PROBLEMLÖSEN (030268)
PROF. NIKOL RUMMEL

TERM:	Summer 2019
MEETING TIME:	Monday, 10 – 12, first Meeting: 08.04.2019
ROOM:	GABF 04/609
CP:	3

In diesem Seminar sollen zunächst grundlegende Konzeptualisierungen menschlichen Lernens erarbeitet werden; anschließend werden verschiedene Formen des Lernens kontrastiert (formales, nonformales und informelles Lernen). Der zweite Teil der Veranstaltung beschäftigt sich mit dem Konzept des Problemlösens. Die Fähigkeit Probleme zu lösen wird als eine der Schlüsselkompetenzen für die Bewältigung von Anforderungen im beruflichen wie privaten Alltag angesehen. Entsprechend stellt sich die Frage, wie eine solche Problemlösefähigkeit zu vermitteln ist. Gleichzeitig wird Problemlösen als Instruktionsmethode genutzt. Dadurch stellt sich die Frage nach dem Zusammenspiel von Problemlösen und Lernen. Abschließend werden spezifische Situationen, in denen Lernen und Problemlösen stattfinden, betrachtet und die damit einhergehenden Möglichkeiten bzw. Herausforderungen diskutiert.

Die Seminarsitzungen werden mit Impulsreferaten, vertiefenden Diskussionen und Gruppenarbeiten so gestaltet, dass eine aktive und interaktive Auseinandersetzung aller Teilnehmer/innen mit den Inhalten gefördert wird.

Anforderungen für den (unbenoteten) Leistungsnachweis: Lektüre ausgewählter Texte und Bearbeitung von kleinen Aufgaben zur Vorbereitung der Sitzungen; aktive Mitarbeit.

SECOND YEAR PROGRAM

Please notice that one and the same course can only be accepted as part of one Module. Double use of the same Module is prohibited.

I. Interdisciplinary Research Module

Usually the interdisciplinary research modules should be completed in the third semester (winter semester). To keep flexibility for the students we offer some courses for these modules in the summer semester as well. Please check individually with the lecturer whether the colloquium will be in English. If the announcement is in English it is in English. But even if the announcement is in German the course may be in English because the literature discussed is in English.

I1. Focus Module Philosophy

COLLOQUIUM

RESEARCH COLLOQUIUM: PHILOSOPHY MEETS COGNITIVE SCIENCE (030 128)

PROF. MARKUS WERNING

TERM:	Summer 2019
MEETING TIME:	Tuesday, 15 – 18, First Meeting: 02.04.2019
ROOM:	GA 04/187
CP:	2-6

In the research colloquium current topics at the interface between Philosophy and Cognitive Science will be discussed. The colloquium hosts talks by visiting leading experts and local researchers as well as presentations by doctoral and master students. Students will be given the (assisted) opportunity to present their projects in English.

11.

Focus Module Philosophy

COLLOQUIUM

COLLOQUIUM: NEW WORK ON CONSCIOUSNESS AND COGNITION (030132)

DR LUKE ROELOFS, PROF. TOBIAS SCHLICHT

TERM:	Summer 2019
MEETING TIME:	Tuesday, 12 – 14, First Meeting: 02.04.2019
ROOM:	GA 03/46
CP:	2-6

In this mixed colloquium, we will discuss recent texts on consciousness and cognition and will invite several international guest speakers presenting their work or work in progress on such topics. Advanced MA students and PhD students also have the opportunity to present their own work in progress, e.g. MA theses projects or PhD theses (or parts of them). We will determine a fixed schedule in the first session.

11.

Focus Module Philosophy

COLLOQUIUM

RESEARCH COLLOQUIUM: FORMAL EPISTEMOLOGY (030125)

PROF. PETER BRÖSSEL

TERM:	Summer 2019
MEETING TIME:	Wednesday, 10 – 12, First Meeting: 03.04.2019
ROOM:	GABF 04/609
CP:	2-6

Formal epistemology studies the same topics as "mainstream epistemology"' but it employs formal tools and methods from mathematics and science to explore them. (It is for this reason that formal epistemology is a truly interdisciplinary enterprise that is relevant not only for philosophy but also for psychology and cognitive science, economics and sociology, and scientific methodology in general.) In the research colloquium we study advanced topics in formal epistemology. In particular, we investigate formal theories of perception, rational reasoning and rational action. Acquaintance with formal methods in philosophy such as logic, set theory and probability theory will be presupposed. Students at the master or doctoral level will be given the opportunity to present their research in English.

Literatur: Will be determined in the Seminar.

11.

Focus Module Philosophy

COLLOQUIUM

RESEARCH COLLOQUIUM "METAPHILOSOPHY AND EXPERIMENTAL PHILOSOPHY" (030126)

PROF. JOACHIM HORVATH

TERM:	Summer 2019
MEETING TIME:	Wednesday, 17 – 19, First Meeting: 03.04.2019
ROOM:	GABF 04/609
CP:	2-6

In this research colloquium, we will discuss current topics from metaphilosophy and experimental philosophy, broadly construed. The colloquium will also host talks by a number of external guests, some of which will be leading experts in their field. Students at the master or doctoral level will be given the opportunity to present their work in English.

12.

Focus Module Psychology

COLLOQUIUM

SCIENTIFIC COLLOQUIUM: COGNITIVE PSYCHOLOGY AND PSYCHONEUROENDOCRINOLOGY (118913)

PROF. OLIVER T. WOLF

TERM:	Summer 2019
MEETING TIME:	Tuesday, 16.00 – 18.00, First Meeting: 02.04.2019
ROOM:	IAFO 02/445
CP:	t.b.a.

In this forum, scientific projects (i.e. Master and PhD projects) of the Cognitive Psychology work group will be presented. The main focus is on experimental stress studies. Here we will try to answer the questions, “what makes us stressed” and “how does stress affects our cognitive skills”. In addition, invited guests from our faculty, from other faculties of the RUB and from other universities world wild will present their current research findings on topics that relate to cognitive psychology or psychoneuroendocrinology.

An overview of the schedule will be available on the AE homepage from the beginning of April.

The seminar will be held in the English language.

12.

Focus Module Psychology

SEMINAR

JOURNAL CLUB: LEARNING AND MEMORY (310526)

PROF. SEN CHENG

TERM:	Summer 2019
MEETING TIME:	Tuesday, 12:00 – 14:00, first meeting: 02.04.2019
ROOM:	NB 3/72
CP:	3

We will focus on the neural basis of learning and memory at the systems level. In each session, a journal article will be presented by one participant and discussed by all participants. The articles will focus on the functional role of the mammalian hippocampus in spatial navigation and episodic memory. They will cover a diverse set of approaches: electrophysiology, imaging, computational modeling, and robotics. Students will select the articles to be presented in class in consultation with the instructor.

Prerequisites: knowledge of learning and memory at bachelor level
Requirements: 66% attendance, presentation
Max. 15 students

I3.

Focus Module Computational Modeling

LECTURE & EXERCISE

COMPUTATIONAL NEUROSCIENCE: VISION AND MEMORY (310504 & 310514)

PROF. LAURENZ WISKOTT

TERM:	Summer 2019
LECTURE:	Tuesday, 12 – 14, First Meeting: 02.04.2019
EXERCISE:	Tuesday, 9 – 10:30 preliminary meeting, exercise 10:30 – 12, First Meeting: 09.04.2018
ROOM:	NB 3/57
CP:	6

This lecture presents models of self-organization in neural systems, in particular addressing vision (receptive fields, neural maps, invariances, attention) and associative memory (Hopfield network).

If this seminar is used for Module C3, it cannot be used for I3.

I3.

Focus Module Computational Modeling

LECTURE & EXERCISE

AUTONOMOUS ROBOTICS: ACTION, PERCEPTION, AND COGNITION (310501 & 310511)

PROF. GREGOR SCHÖNER

TERM:	Summer 2019
LECTURE:	Thursday, 14.15 – 16.00 (first meeting: 11.04.2019)
EXERCISE:	Thursday, 16.15 – 17.00 (first meeting: 11.04.2019)
ROOM:	NB 3/57
CP:	6

Neuroinformatics is concerned with the discovery of new solutions to technical problems of information processing. These solutions are sought based on analogies with nervous systems and the behaviour of organisms. This course focuses on three exemplary problems to illustrate this approach:

(a) Artificial action (autonomous robotics);
(b) Artificial perception (robot vision);
(c) Artificial cognition (simplest cognitive capabilities of autonomous robots such as decision making, memory, behavioural organization).

The main methodological emphasis is on nonlinear dynamical systems' approaches and dynamic (neural) fields.

If this seminar is used for Module C2, it cannot be used for I3.

14.

Focus Module Neuroscience

COLLOQUIUM

RESEARCH COLLOQUIUM NEUROPSYCHOLOGY (118912)

DR. PATRIZIA THOMA

TERM:	Summer 2019
MEETING TIME:	Thursday, 14 – 16, First Meeting: 04.04.2019
ROOM:	IB 6/127
CP:	t.b.a.

Vorstellung laufender Forschungsarbeiten, sowie Vorträge von Gastdozenten zu klinisch-neuropsychologischen Themen. Ein Zeitplan mit Informationen über Themen und Referenten wird zu Beginn des Semesters per Aushang und auf der Homepage bekannt gegeben. Die kritische Auseinandersetzung mi den Lerninhalten in Form von Diskussionen ist ein zentrales Lernziel und geht in die Bewertung mit ein.

14.

Focus Module Neuroscience

COLLOQUIUM

RESEARCH COLLOQUIUM BIOPSYCHOLOGY (118914)

PROF. ONUR GÜNTÜRKÜN

TERM:	Summer 2019
MEETING TIME:	Monday, 13.00 – 15.00, First Meeting: 01.04.2019
ROOM:	TBA.
CP:	t.b.a.

The research colloquium is open to all employees and graduate students of the Biopsychology department. The Aim is to present and discuss their research. In addition external guests are invited to give talks on different aspects of biopsychology. You can have a look at the schedule at the department's information board and our homepage: http://www.bio.psy.ruhr-unibochum.de/

14.

Focus Module Neuroscience

COLLOQUIUM

RESEARCH COLLOQUIUM: GENETIC PSYCHOLOGY (118911)

DR. ROBERT KUMSTA

TERM:	Summer 2019
MEETING TIME:	Monday, 16 – 18, first Meeting: 01.04.2019
ROOM:	IB 5/103
CP:	3

Dieses Forum dient zur Vorstellung aktueller Forschungsprojekte und Qualifikationsarbeiten

(Bachelorarbeiten, Masterarbeiten, Promotionsprojekte) der Arbeitseinheit Genetic Psychology. Darüber hinaus werden eingeladene Wissenschaftler aktuelle Forschungsergebnisse vorstellen.

Für die Vergabe von Creditpoints muss eine eigenständige Leistung in Form eines Essays erbracht werden, dass thematisch einen der Forschungsschwerpunkte der AE Genetic Psychology aufgreift.