

Master and PhD Program Computational Neuroscience

Recommended Courses and Programs, WiSe 2019/2020

These courses are recommended for **senior master students** of Computational Neuroscience (at least in their 3rd semester) and for **PhD students** as Courses on Advanced Topics / Hard Skill Courses. We recommend that master students in the 1st and 2nd semesters concentrate on the compulsory BCCN courses:

<http://www.bccn-berlin.de/Teaching/Courses+and+Modules/>

Please choose courses for Individual Studies and Advanced Topics **upon consultation with your mentor!** Only master courses can be recognized for Courses on Advanced Topics.

This list as well as the list of relevant summer schools and conferences is available at:

http://www.bccn-berlin.de/Graduate+Programs/Web_Links/

For questions and feedback: graduateprograms@bccn-berlin.de

As not all offered courses of Berlin universities are online yet, this is a preliminary version of the list.

TITLE	CONTACT	LINK and INFO
TU Berlin		
Current Topics in Computational Neuroscience (seminar series, in English)	Prof. Henning Sprekeler (h.sprekeler@tu-berlin.de)	TU Berlin Current Topics Computational Neuroscience
Brain-Computer Interfacing (lecture and tutorial, in English)	Prof. Benjamin Blankertz (benjamin.blankertz@tu-berlin.de)	https://wiki.ml.tu-berlin.de/wiki/NT/Courses (to be updated)
Current Topics in Brain-Computer Interfacing (project, in English)	Prof. Benjamin Blankertz (benjamin.blankertz@tu-berlin.de)	https://wiki.ml.tu-berlin.de/wiki/NT/Courses (to be updated)
Advanced topics in Reinforcement Learning (seminar, in English)	Dr. Vaios Laschos (vaios.laschos@tu-berlin.de) Prof. Klaus Obermayer (oby@ni.tu-berlin.de)	TU Berlin Advanced topics in Reinforcement Learning
Projects in Machine Learning and Artificial Intelligence (German/ English)	Prof. Manfred Opper (manfred.opper@tu-berlin.de) Cordula Lippke (cordula.lippke@tu-berlin.de)	TU Berlin Projects in Machine Learning
Künstliche Intelligenz: Grundlagen und Anwendungen (lecture + seminar, in German)	Prof. Manfred Opper (manfred.opper@tu-berlin.de) Prof. Sahin Albayrak (sahin.albayrak@tu-berlin.de) Dr. Stefan Fricke (stefan.fricke@tu-berlin.de) Sebastian Thiel (sebastian.thiel.1@campus.tu-berlin.de)	TU Berlin Künstliche Intelligenz - Grundlagen und Anwendungen

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	berlin.de Cordula Lippke (cordula.lippke@tu-berlin.de)	
Probabilistic and Bayesian Modelling in ML and AI	Prof. Manfred Opper (manfred.opper@tu-berlin.de)	TU Probabilistic and Bayesian Modelling in ML and AI
Monte Carlo Methods in Machine Learning and Artificial Intelligence (lecture + exercise, in English)	Prof. Manfred Opper (manfred.opper@tu-berlin.de) Andreas Ruttor (andreas.ruttor@tu-berlin.de)	TU Monte Carlo Methods in Machine Learning and Artificial Intelligence
Project KI - symbolische Künstliche Intelligenz (project, In German)	Dr. Stefan Fricke (stefan.fricke@tu-berlin.de)	TU Berlin KI Projekt
Applications of Robotics and Autonomous Systems / (Project, in English)	Sahin Albayrak and Orhan Can Görür (lehre@lists.dai-labor.de)	TU Applications of Robotics and Autonomous Systems
Robotics - Robotics (in German) - Computational Biology (in English) - Robotics Project (in German)	Prof. Oliver Brock (oliver.brock@tu-berlin.de)	TU Berlin Robotics* * WS 2019/20 to be updated
Brain-Computer-Interfacing: from Neurons to Data (seminar, in English)	Daniel Miklody (miklody@tu-berlin.de) Prof. Benjamin Blankertz (benjamin.blankertz@tu-berlin.de)	TU Berlin Brain Computer Interfacing
Neuronale Netze (seminar, in German)	Prof. Reinhold Orglmeister (reinhold.orglmeister@tu-berlin.de)	TU Berlin Neuronale Netze
Quality and Usability Lab - Sprachkommunikation / Speech Communication - Medieninformatik Einführung - Computer-supported Interaction - Communication Acoustics (MOOC) - Usable Privacy - Biometric Identification and Verification - Affective Computing - Neuro-Usability - Study Project Quality and	Prof. Sebastian Möller (sebastian.moeller@telekom.de)	TU Berlin Quality and Usability Lab* * WS 2019/20 to be updated

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Usability - Medienprojek (Modul: Interdisziplinäres Medienprojekt) - Forschungskolloquium Usability		
Stochastic Processes in Neuroscience I (lecture, in English)	Prof. Tilo Schwalger (tilo.schwalger@tu-berlin.de) Prof. Wilhelm Stannat (wilhelm.stannat@tu-berlin.de)	TU Berlin Stochastic processes in neuroscience I
Stochastic Processes in Neuroscience II (lecture, in English)	Prof. Tilo Schwalger (tilo.schwalger@tu-berlin.de) Prof. Wilhelm Stannat (wilhelm.stannat@tu-berlin.de)	TU Berlin Stochastic processes in neuroscience II
Stochastic Models in Neuroscience (seminar, in English)	Prof. Tilo Schwalger (tilo.schwalger@tu-berlin.de) Prof. Wilhelm Stannat (wilhelm.stannat@tu-berlin.de)	TU Berlin Stochastic models in neuroscience
Nonequilibrium Statistical Physics (lecture + tutorial, in English)	Dr. Anna Zakharova, (anna.zakharova@tu-berlin.de) Dr. Mosheen Khadem (jebreilkhadem@tu-berlin.de)	TU Berlin Nonequilibrium Statistical Physics
Nonlinear dynamics in complex systems (Complex networks and their applications) (seminar, in English)	Dr. Anna Zakharova (anna.zakharova@tu-berlin.de) Prof. Eckehard Schöll (eckehard.schoell@tu-berlin.de) Dr. Iryna Omelchenko (omelchenko@itp.tu-berlin.de)	TU Berlin Nonlinear dynamics in complex systems
Nichtlineare Dynamik und Strukturbildung (lecture, tutorial, seminar, in German)	Prof. Harald Engel (harald.engel@tu-berlin.de)	TU Berlin Nichtlineare Dynamik und Strukturbildung
HU Berlin		
Anwendungen der Signalverarbeitung und Mustererkennung (Seminar, in German)	Prof. Beate Meffert (meffert@informatik.hu-berlin.de)	HU Berlin Signalverarbeitung
Machinelles Lernen in der Robotik (seminar, in German)	Prof. Verena Hafner (hafner@informatik.hu-berlin.de)	HU Berlin Machinelles Lernen in der Robotik
Aktuelle Trends und Methoden der Kognitions und Neurowissenschaft: “Effektive Visualisierung von Daten: Theoretische Grundlagen und praktische Umsetzung” (seminar, in German)	Prof. Martin Rolfs (martin.rolfs@hu-berlin.de) HU Berlin Aktuelle Trends und Methoden der Kognitions und Neurowissenschaft: “Effektive Visualisierung von Daten: Theoretische Grundlagen und praktische Umsetzung”	
Wahrnehmung,	Prof. Martin Rolfs	HU Berlin Wahrnehmung, Aufmerksamkeit und Emotion:

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Aufmerksamkeit und Emotion: “Neuroscience of Active Vision” (Seminar, in English)	(martin.rolfs@hu-berlin.de)	“Neuroscience of Active Vision”
Neurokognitive Psychologie: Allgemeine Psychologie II (colloquium, in German)	Prof. Martin Rolfs (martin.rolfs@hu-berlin.de)	HU Berlin Neurokognitive Psychologie: Allgemeine Psychologie II
Neurophysiologie (lecture, in German)	Prof. Matthias Hennig (matthias.hennig@biologie.hu-berlin.de)	HU Berlin Neurophysiologie
Mathematische Modellierung biologischer Systeme (practical, in German)	Prof. Edda Klipp (edda.klipp@rz.hu-berlin.de)	HU Berlin Mathematische Modellierung biologische Systeme
Mathematische Modellierung in der quantitativen Biologie (lecture + seminar, in German)	Prof. Hanspeter Herzel (h.herzel@cms.hu-berlin.de) Prof. Nils Blüthgen (nils.bluehgen@charite.de)	HU Berlin Mathematische Modellierung quantitative Biologie
Mathematik 1 (lecture, in German)	Prof. Richard Kempter (r.kempter@biologie.hu-berlin.de) Prof. Susanne Schreiber (s.schreiber@rz.hu-berlin.de)	HU Berlin Mathematik 1
Computerübungen Simulation von mathematischen Modellen (practical, in German)	Prof. Nils Blüthgen (nils.bluehgen@charite.de)	HU Berlin Computerübungen Simulation von mathematischen Modellen
Cognition, behaviour and evolution (lecture and seminar, in English)	Prof. York Winter (york.winter@charite.de)	HU Berlin Cognition Behaviour Evolution
Cognitive Neurobiology: current topics (seminar, in English)	Prof. York Winter, (york.winter@charite.de)	HU Berlin Current Topics Cognitive Neurobiology
Grundlagen und Anwendungen der Kognitionspsychologie (lecture, in German)	Prof. Elke van der Meer (vdmeer@rz.hu-berlin.de)	HU Berlin Grundlagen Anwendungen Kognitionspsychologie
Neurowissenschaftliche Methoden (lecture + seminar , in German)	Dr. Olaf Dimigen (olaf.dimigen@hu-berlin.de)	HU Berlin Neurowissenschaftliche Methoden
Kognitionswissenschaft I (lecture series, in German)	Sebastian Markett (sebastian.markett@hu-berlin.de)	HU Berlin Ringvorlesung Kognitionswissenschaft
Irreversible Prozesse und Selbstorganisation (seminar, in German)	Prof. Igor Sokolov (igor.sokolov@physik.hu-berlin.de) Prof. Benjamin Lindner (benjamin.lindner@physik.hu-berlin.de)	HU Berlin Irreversible Prozesse Selbstorganisation

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Multivariate Statistical Analysis I (lecture, in English)	Prof. Andrija Mihoci (andrija.mihoci@b-tu.de)	HU Berlin Multivariate Statistical Analysis
Datenanalyse II (Seminar, German)	Dr. Sigbert Klinke (sigbert@wiwi.hu-berlin.de)	HU Berlin Datenanalyse
FU Berlin		
Neurobiologie und Verhalten A und B (block course, in German)	Prof. Constance Scharff (constance.scharff@fu-berlin.de)	FU Berlin Neurobiologie und Verhalten A FU Neurobiologie und Verhalten B
Structure and Function of Neural Circuits I and II (block seminar, in English)	Prof. Mathias Wernet (mathias.wernet@fu-berlin.de)	FU Berlin Structure and Function of Neural Circuits
Robotik (lecture + seminar, in German)	Dr. Daniel Goehring (drgoehring@zedat.fu-berlin.de)	FU Berlin Robotik
Künstliche Intelligenz – autonome Fahrzeuge (seminar, in German)	Dr. Daniel Goehring (drgoehring@zedat.fu-berlin.de)	FU Berlin Künstliche Intelligenz autonome Fahrzeuge
Artificial and Collective Intelligence (Forschungsseminar, German/English)	Prof. Tim Landgraf (tim.landgraf@fu-berlin.de)	FU Berlin Artificial and Collective Intelligence
Journal Club Computational Biology (seminar, in German-English)	Prof. Knut Reinert (knut.reinert@fu-berlin.de)	FU Berlin Journal Club Computational Biology
Einführung in die Neurobiologie und Neuroinformatik für Bioinformatiker (lecture, in German)	Prof. Peter Robin Hiesinger (p.rh@fu-berlin.de)	FU Einführung Neurobiologie Neuroinformatik
Wissenschaftliche Methoden tierexperimenteller Arbeiten (Seminar, in German)	Prof. Lars Lewejohann (lars.leweijohann@fu-berlin.de)	FU Berlin Wissenschaftliche Methoden tierexperimenteller Arbeiten
Optimierung (lecture + seminar, in English)	Prof. Ralf Borndörfer (borndoerfer@zib.de)	FU Berlin Optimierung
Numerik für Bioinformatiker (lecture + seminar, in English)	Dr. Max von Kleist (vkleist@zedat.fu-berlin.de)	FU Berlin Numerik für Bioinformatiker
Klinische Neuropsychologie (seminar, in German)	Prof. Michael Niedeggen (niedegg@zedat.fu-berlin.de)	FU Berlin Klinische Neuropsychologie
Master Program SCAN (Social, Cognitive, Affective Neuroscience), in English Modules:	Dr. Jana Lüdtker (jana.luedtke@fu-berlin.de) Prof. Hauke Heekeren (hauke.heekeren@fu-berlin.de)	http://www.ewi-psy.fu-berlin.de/studium/Psychologie/social_cognitive_affective_neuroscience/Modules/index.html FU Berlin SCAN all courses

TITLE	CONTACT	LINK and INFO
- Social, Cognitive & Affective Neuroscience - Clinical SCAN - Statistical Methods - Applied Programming - Learning Memory & Decision Making - Advanced Neurocognitive Methods I & II		
The mammalian brain: structure, function and plasticity (practical, in English)	Prof. Ursula Koch (ursula.koch@fu-berlin.de)	FU Berlin The mammalian brain: structure, function and plasticity
Intelligente Systeme und Robotik (research seminar, in German)	Prof. Raul Rojas (raul.rojas@fu-berlin.de)	FU Berlin Intelligente Systeme und Robotik
KI: Autonome Fahrzeuge (seminar, in German)	Prof. Raul Rojas (raul.rojas@fu-berlin.de)	FU Berlin KI: Autonome Fahrzeuge
Courses offered by other schools and graduate programs in Berlin		
Master Program Molecular Medicine Human Genetics Functional Genomics Developmental Genetics Infections and Immune Response Cardiovascular Diseases and Therapy Cancer Diseases Maintenance and Integrity of the Endocrine System	Dr. Sarah Bhargava (sarah.bhargava@charite.de) or http://www.molecular-medicine-berlin.com/en/metas/contact/adresse/bhargava-2/	http://www.molecular-medicine-berlin.com/en/program/modules/ Please contact the project coordinator for information about currently offered courses.
Berlin School of Mind and Brain (PhD and master courses) Modules: - Neuroanatomy and Neurophysiology - Neuroimaging - Cognitive Neuroscience - Basic Philosophical Concepts and Philosophy of Mind	mb-office@hu-berlin.de emb-education@hu-berlin.de	Mind & Brain Master all courses Please note that the courses flagged as “for mind and brain students only” cannot be attended by external students. If you are a student of Humboldt-Universität zu Berlin, please register for the Master courses in the Überfachlicher Wahlpflichtbereich section of AGNES. If you are a student of another university, please print out the Registration as guest auditor / visiting student form . This form will have to be signed by the lecturer of the class you plan to attend as well as by the Master’s program coordinator. From this semester on, there is only one way to get credits in the Mind and Brain program:

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<ul style="list-style-type: none"> - Computational Neuroscience & Statistics - Cognitive Neuroscience - Lifespan and Plasticity - Clinical Neuroscience - Ethics and Neuroscience - Language and the Brain - Research Methods 		<ul style="list-style-type: none"> - You have to attend *two courses* (at least 75 % of all sessions) = *10 ECTS* - In both courses you have to fulfill smaller class requirements (usually a presentation) - In ONE of the two courses additionally you have to write a 20 p. paper (1 page equals 2000 characters without spaces) <p>You don't have to attend both courses in the same semester!</p>
<p>Berlin Mathematical School Basic Courses and Advanced Courses covering the following topics:</p> <ul style="list-style-type: none"> - Differential geometry, global analysis, and mathematical physics - Algebraic and arithmetic geometry, number theory - Probability, statistics, and financial mathematics - Discrete Mathematics and combinatorial optimization - Geometry, topology and visualization - Numerical analysis and scientific computing - Applied analysis and differential equations 	<p>TU, HU, FU office@math-berlin.de</p>	<p>BMS Basic Courses BMS Advanced Courses</p>
<p>Master Program Medical Neurosciences Basic Neurobiology Working with Data Neurophysiology Advanced Problems and Topics in Neuroscience Clinical Neuroscience Academic Writing and Publishing Experimental Design</p>	<p>Charité Dr. Benedikt Salmen benedikt.salmen@charite.de</p>	<p>http://www.medical-neurosciences.de/en/program/master/</p> <p>Please contact the contact person for information about currently offered courses.</p>