



Select list of modules for the certificate “Cognitive Science”

Theoretical area

Name of the module/course	Language	In charge of the course
Compressive sensing and inverse problems in Signal Processing (lecture + seminar) 5 LP	en	Prof. Dr. Guiseppe Caire
Deep learning 5 LP	en	Prof. Dr. Gitta Kutyniok
Channel coding (lecture) 5 LP	en	Prof. Dr. Guiseppe Caire
Einführung in die kognitiven Neurowissenschaften (lecture + tutorial) 5 LP	dt	Prof. Dr. Henning Sprekeler
Information theory (lectures) 5 LP	en	Prof. Dr. Guiseppe Caire
Kognitive Algorithmen (seminars + tutorial) 5 LP	dt/en	Prof. Dr. Klaus-Robert Müller
Künstliche Intelligenz: Grundlagen und Anwendungen (lecture + tutorials) 5 LP	dt	Prof. Dr. Manfred Opper
Machine intelligence I (lecture + tutorial) 5 LP	en	Prof. Dr. Klaus Obermayer
Machine learning I (lecture + tutorial) 5 LP	dt/en	Prof. Dr. Klaus-Robert Müller
Machine learning II (lecture + tutorial) 5 LP	dt/en	Prof. Dr. Klaus-Robert Müller
Mathematical introduction to compressed sensing (lecture) 10 LP	dt/en	Prof. Dr. Gitta Kutyniok
Mathematical methods in signal processing and communications (lectures) 5 LP	en	Prof. Dr. Slawomir Stanczak
Modern signal processing for communications (lectures) 5 LP	en	Prof. Dr. Slawomir Stanczak
Selected topics in wireless network optimization (lecture) 5 LP	en	Prof. Dr. Slawomir Stanczak
Stochastische Prozesse in den Neurowissenschaften (lecture + tutorial) 10 LP	dt	Prof. Dr. Wilhelm Stannat



Application area

Name of the course	Language	In charge of the course
Acquisition and analysis of neural data (lecture + tutorial + practical work) 10 LP	en	Robert Martin
Brain-Computer Interfacing – basic (lecture + tutorial) 5 LP	en	Prof. Dr. Benjamin Blankertz
Brain Computer Interfacing (lecture + tutorial + practical work) 10 LP	en	Prof. Dr. Benjamin Blankertz
Robotics (lecture + tutorial + practical work) 5 LP	en	Prof. Dr. Oliver Brock



Requirements for the certificate “Cognitive Science”

1. 30 credit points must be achieved to pass the certificate successfully. A maximum of two credit points can be awarded for the visit of BIMoS Days (minimum of two). A bonus credit point can be given for active participation in discussions on BIMoS Days.
2. The final examinations of the individual lectures and courses must be passed successfully.
3. At least two courses of each area, theory and application must be taken.
4. Courses that have been already successfully covered in the field of "Cognitive Science" in the Master's degree can be taken into account. For this purpose, a written application must be submitted to the BIMoS office.



Certificate "Cognitive Science"

Name: _____

Address: _____

E-Mail: _____

List of the successfully passed courses

Name of the course	Person in charge	Signature	Date

Please observe the notes on the back.



Technische Universität Berlin
Berlin International Graduate School in Model and
Simulation based Research

