

Course title	Principle and Methodology in Brain Science
Term	前期 1st Half
Credit(s)	1
The main day	The main period
Program/Department	48 Physiological Sciences
Lecturers	Mitsuhiro Tateyama, Akiyuki Nishimura, and others
成績評価区分 Grading Scale	A, B, C, Dの4段階評価 Four-grade evaluation
レベル Level	Level 3
力量 Competence	専門力 Academic expertise

Instructor
Full name
* IZUMI YASUSHI
FUKUNAGA MASAKI
NISHIJIMA KAZUTOSHI
KOBAYASHI KENTA
SOKABE TAKAAKI
TATEYAMA MICHIIHIRO
NARUSHIMA MADOKA
MURAKOSHI HIDEJI
ENOKI RYOSUKE
TOMATSU SAEKA
HASEBE RIE
NISHIMURA AKIYUKI
CHIKEN SATOMI
YUASA KENICHI

Outline	This subject focuses on experimental approaches in brain science. 14 methodologies frequently used in brain science will be introduced to cultivate critical views on scientific data.
Learning objectives	Optical microscopy In vivo imaging of the human brain Methods for cardio-vascular functions Methods for neuroimmunology Noninvasive electromagnetic measurements of the human brain Methods for sensory biology Cell biological methods Molecular biological methods Molecular physiological methods Electrophysiological methods Methods for animal experimental modeling
Grading policy	Students must attend at least half of the lectures to get credit. It is also required to write a short paper on a topic related to one of the lectures. The paper will be graded by the lecturer, and it will be used to determine pass/fail.
Lecture Plan	Schedule: May 22 – July 3 10:00–11:00, 11:00–12:00 on Thursdays May 22 Optical microscopy 1 (Hideji Murakoshi) May 22 Optical microscopy 2 (Ryosuke Enoki) May 29 In vivo imaging of the human brain (Masaki Fukunaga) May 29 Methods for cardio-vascular functions (Akiyuki Nishimura) Jun 5 Methods for neuroimmunology (Rie Hasebe) Jun 5 Noninvasive electromagnetic measurements of the human brain (Kenichi Yuasa) Jun 12 Methods for sensory biology (Takaaki Sokabe) Jun 12 Cell biological methods (Yasushi Izumi) Jun 19 Molecular biological methods (Kenta Kobayashi) Jun 19 Molecular physiological methods (Mitsuhiro Tateyama) Jun 26 Electrophysiological methods 1 (Madoka Narushima) Jun 26 Electrophysiological methods 2 (Saeka Tomatsu) July 3 Electrophysiological methods 3 (Satoshi Chiken) July 3 Methods for animal experimental modeling (Kazutoshi Nishijima)
Location	Zoom online
Language	Japanese
Textbooks and references	“Guide to Research Techniques in Neuroscience” edited by Matt Carter and Jennifer Shieh, Academic Press (2010).
Notes for students of other programs	Students in courses other than the Physiological Sciences course should contact the following email address before enrolling in the course. sokendai-adm@nips.ac.jp
Related URL	https://www.nips.ac.jp/graduate/curriculum.html
Explanatory note on above URL	Please keep be updated on the latest schedule from “ Schedule of the classes” on the program website.
Others	Pre-requisites: No particular background knowledge is required.
Keyword	–
Contact for Course Inquiries	Students in courses other than the Physiological Sciences course should contact the following email address before enrolling in the course. sokendai-adm@nips.ac.jp