

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	
KUBOTA YOSHIYUKI	
KOBAYASHI KENTA	
SOKABE TAKAAKI	
TATEYAMA MICHIIHIRO	
NARUSHIMA MADOKA	
HIRABAYASHI MASUMI	
FUKATA YUKO	
MURAKOSHI HIDEJI	
ENOKI RYOSUKE	
TOMATSU SAEKA	
HASEBE RIE	
NISHIMURA AKIYUKI	

Outline	This subject focuses on experimental approaches in brain science. 11 methodologies frequently used in brain science will be introduced to cultivate critical views on scientific data.
Learning objectives	<ul style="list-style-type: none"> Molecular physiological methods Methods for cardio-vascular functions Electrophysiological methods Optical microscopy Morphological methods Cell biological methods Methods for sensory biology In vivo imaging of the human brain Molecular biological and biochemical methods Methods for mammalian transgenesis Methods for neuroimmunology
Grading policy	<p>Students must attend at least half of the lectures to get credit.</p> <p>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.</p>
Lecture Plan	<p>Schedule: May 18 – June 29 10:00–11:00, 11:00–12:00 on Thursdays</p> <ul style="list-style-type: none"> May 18 Molecular physiological methods (Mitsuhiro Tateyama) May 18 Methods for cardio-vascular functions (Akiyuki Nishimura) May 25 Electrophysiological methods 1 (Madoka Narushima) May 25 Electrophysiological methods 2 (Saeka Tomatsu) Jun 1 Optical microscopy 1 (Hideji Murakoshi) Jun 1 Optical microscopy 2 (Ryosuke Enoki) Jun 8 Morphological methods (Yoshiyuki Kubota) Jun 8 Cell biological methods (Yasushi Izumi) Jun 15 Methods for sensory biology (Takaaki Sokabe) Jun 15 In vivo imaging of the human brain (Masaki Fukunaga) Jun 22 Molecular biological and biochemical methods 1 (Yuko Fukata) Jun 22 Molecular biological and biochemical methods 2 (Kenta Kobayashi) Jun 29 Methods for mammalian transgenesis (Masumi Hirabayashi) Jun 29 Methods for neuroimmunology (Rie Hasebe)
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	-