



CampusPlan Web Service

Syllabus Reference

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 MICHIIRO

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

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	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 18 – June 29 10:00–11:00, 11:00–12:00 on Thursdays 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	–

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