

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

NISHIJIMA KAZUTOSHI

KOBAYASHI KENTA

SOKABE TAKAAKI

TATEYAMA MICHIIRO

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 (Satomi 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

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