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 3
力量: Competence: 専門力: Academic expertise

Instructor

Full name
* IZUMI YASUSHI
FUKUNAGA MASAKI
KUBOTA YOSHIYUKI
KOBAYASHI KEN
SOKABE TAKAAKI
TATEYAMA MICHIMI
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 (Takaku Sokebe)
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

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: -