

Syllabus

1. Course Title, style, and credit
Behavioral neuroscience, Lecture and practice, 1 credit
2. Appropriate grade level and Eligible Departments
All Departments.
For Department of Physiological Sciences, D1, 2 (obligatory), D3-5 (optional)
3. Lectures
Atsushi Nambu
E-mail: nambu@nips.ac.jp TEL: 0564-55-7771 FAX: 0564-55-7773
4. Time
10:00 - 12:00 am on Friday in January and February, 2018
5. Place
Lecture: Lecture room on the 1st floor of NIPS building (Myodaiji Area)
Practice: Rm732 (Seminar room of Department of System Neurophysiology) on the 7th floor of NIPS building (Myodaiji Area)
The lectures will be delivered by the remote lecture system.
6. Prerequisites and Styles
Basic knowledge on the central nervous system will help to understand the lecture but is not essential.
7. Contents and objectives
Living animals, including human beings, obtain many pieces of information from the external and internal environments, integrate them to make a decision for appropriate behavioral activity, and finally take action based on self-intension. The brain areas, such as the cerebral cortex, basal ganglia and cerebellum, play a major role in controlling voluntary movements. On the other hand, malfunctions of these structures result in movement disorders, such as Parkinson's disease and dystonia. The aim of this course "behavioral neuroscience" is to understand the mechanisms underlying higher motor functions and the pathophysiology of movement disorders.
8. Schedule
 - (1) January 5 (Fri) 10:00-12:00
Introduction. Atsushi Nambu (NIPS)
 - (2) January 12 (Fri) 10:00-12:00
Circuitry for motor control. Nobuhiko Hatanaka (NIPS)
 - (3) January 19 (Fri) 10:00-12:00
Physiology and pathophysiology of the basal ganglia. Satomi Chiken (NIPS)
 - (4) January 26 (Fri) 10:00-12:00
Molecular aspect of the basal ganglia. Hiromi Sano (NIPS)
 - (5) February 2 (Fri) 10:00-12:00
Functions of the cerebellum. Atsushi Nambu (NIPS)
 - (6) February 9 (Fri) 10:00-12:00
Treatment of movement disorders / Control of jaw movements. Satomi Chiken / Nobuhiko Hatanaka (NIPS)
 - (7) February 16 (Fri) 10:00-12:00
Cortical control of action. Hajime Mushiake (Tohoku Univ)
 - (8) February 23 (Fri) 10:00-12:00
Practice: Observe neuronal activity
9. Lecture materials and readings

Kandel et al.: Principles of Neural Science 5th ed. McGraw-Hill, 2012
Squire et al.: Fundamental Neuroscience 4th ed. Academic Press, 2012

10. Grades

Students must attend the classes at least half of total classes to take a credit.

Students are requested to file the short essay related to the Course Objectives. For evaluation, more than 60 in a 100-point scale is judged successful.

11. Notes

Nothing in particular