## Principle and Methodology in Brain Science

<table>
<thead>
<tr>
<th>Year</th>
<th>2017</th>
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<tbody>
<tr>
<td>Class starts at</td>
<td>1st semester</td>
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<tr>
<td>Period</td>
<td>One semester</td>
</tr>
<tr>
<td>Subject Code</td>
<td>10SLS007</td>
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<tr>
<td>Course title</td>
<td>Principle and Methodology in Brain Science</td>
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<tr>
<td>Schoold/Department/Program</td>
<td>School of Life Science</td>
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<tr>
<td>Credit</td>
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<td>Category</td>
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<td>Field</td>
<td>None Category</td>
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### Course description
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.

### Course purpose
To understand the basic principles in Molecular physiological methods, Morphological methods, Optical microscopy, In vivo imaging of the human brain, Molecular biological and biochemical methods, Methodology in Genome Science, New genome-editing tools, Clinical-neurophysiological methods, State-of-the-art neuroimaging, Cell biological methods, Methods for Sensory Biology and Electrophysiological methods

### Grading policy and criteria
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

### Course content
Schedule: May 11 – June 29 10:00–12:00 (except on May 11, 9:00–11:00) on Thursdays

- **May 11** Molecular physiological methods (Michihiro Tateyama, Kazuyoshi Murata)
- **May 18** Morphological methods (Masataka Murakami, Nobuhiko Ohno)
- **May 25** Optical microscopy (Hideji Murakoshi), In vivo imaging of the human brain (Masaki Fukunaga)
- **Jun 01** Molecular biological and biochemical methods (Kenta Kobayashi, Yuko Fukata)
- **Jun 08** Methodology in Genome Science (Yasuhiro Go), New genome-editing tools (Masumi Hirabayashi)
- **Jun 15** Clinical-neurophysiological methods (Tetsuo Kida), State-of-the-art neuroimaging (Junichi Chikazoe)
- **Jun 22** Cell biological methods (Yuji Izumi), Methods for Sensory Biology (Takaaki Sokabe)
- **Jun 29** Electrophysiological methods (Koji Sato, Madoka Narumi)

### Classroom location
1F Lecture room in Myodaiji building of NIPS
The lectures will be delivered by the remote lecture system.

### Language used in the classroom
Japanese

### Suggested grade level
1, 2, 3, 4, 5

### Textbooks and required readings

### Remarks
Pre-requisites: No particular background knowledge is required.

### Course coordinator
Atsushi Nambu