Syllabus for RIKEN CBS Brain Science Training Program

Basic Information

Program Chair: Dr. Thomas J. McHugh

Program Vice-Chair: Dr. Motomasa Tanaka

Program Instructors: RIKEN CBS PIs, Postdocs, & Grad Students

Teaching Assistant: Eichi Toyoizumi (McHugh Lab)

Class format & Time: Online (Zoom) on Tuesday from 4:30pm ~ 6:30pm

Language: English only

Course Description

The Brain Science Training Program is a 2 semester-long (October through June) lecture series that consists of 23 lectures, each taught by a different RIKEN CBS PI, 3 journal club presentations, and 2 oral exams at the end of each semester. This program is suitable for those with a strong interest in becoming a neuroscientist. It is primarily designed for the early-stage graduate students, but applications will be accepted from senior-graduate and undergraduate students as well.

Mission & Learning Outcomes

Neuroscience employs a wide range of disciplines from molecular biology to mathematics to ethology. Brain Science Training Program takes full advantage of the great diversity of CBS's research and provides a systematic overview of neuroscience. It is our sincere hope that through this program we will be able to play a part in fostering the next generation of neuroscientists.

By the end of the program, students:

1. Have a good grasp of the broad field of neuroscience
2. Can connect concepts and methods in different subfields of neuroscience
3. Are informed about scientific practices and a wide variety of training/career paths to become a neuroscientist
4. Are more confident in scientific communication in English
5. Have peers who share the same passion for neuroscience
6. Are ready to come back to RIKEN CBS (hopefully…!)

Schedule
Application Deadline: 2022/09/26
Program Start Date: 2022/10/11
Mid-term Oral Exam: 2023/02/27
Final Oral Exam: 2023/06/13
Graduation Ceremony: 2023/06/20

For those of you trying to make BSTP count towards university credits, you are responsible for registering through your registration system at your university AFTER you are accepted to the BSTP. We cannot register on your behalf. (Currently, this applies to the University of Tokyo, Waseda University & MIP program at Kyoto University). For full lecture and exam schedules please refer to Appendix A or the BSTP website.

Application
Please prepare the following set of documents in English:
• CV in a specified format
• Letter of Motivation (~400 words)
• Scientific Research Paper Review (400~800 words)
For submission, please go to the Application form.

Completion Requirement & Grading
For the completion of the program, you must attend at least 80% of the course lectures/journal clubs/exams. Participation in exams and presentations is required. A grade of less than 40% would result in an incomplete. Grades are weighted as follows:

Attendance: 25% (1 x 28 + 2 bonus pt = 30pt)
Journal Club Presentations: 25% (10pt x 3 = 30pt)
Mid-term Oral Exam: 25% (30pt)
Final Oral Exam: 25% (30pt)
Total: **100% (120pt)**

Attendance is taken with the submission of post-class surveys, and we will also be monitoring zoom attendance. 2 bonus points will come with either participation as in-class leaders or program reporters. Doing both won't give you 4 points, but we'll love you. Your grades will NOT appear on the certificate of completion.

For those of you taking BSTP as university credits, this will then be converted to a grade. 80% or more would be converted to the highest grade in the system, and 40% or less would be the lowest grade.

Exams As described above, there will be two oral exams given at the end of each semester. 3~6 exam slides will be provided for each exam; you will be asked about one of the exam slides on the spot. More details will be announced later. Please refer to Appendix B for the exam rubric.

Mid-term Exam: Covers "Development", "Sensory Systems & Integration", & "Circuit, Cell, & Behavior".
Final Exam: Covers "Disease", "The Human Brain", & "Computation & Theory".

Journal Club Presentations
As described above, there will be three journal club sessions. Please refer to Appendix C for the rubric. Active participation in group work is both expected and required.
1. **RIKEN CBS Paper Journal Club**: Students will be pre-assigned to groups of 4~5, and they will be presenting a unique pre-assigned paper from RIKEN CBS.
2. **Peer-Review Practice**: Students with similar interests are assigned to groups of 4~5, and will be working on a peer-review-like presentation on a pre-assigned paper.
3. **Free-choice Journal Club**: Students will work in a pair to decide on a paper of their choice and present it.

Learning Support
• **Teaching Assistants**: Teaching assistants (TA) are either grad students or postdocs from RIKEN CBS. They are there to facilitate your learning and be a bridge between students and lecturers.
• **Office-hour Sessions**: TAs will hold some non-mandatory sessions such as a presentation workshop, a career seminar, RIKEN life introductions, etc.
• **In-class Leaders**: We will be looking for two in-class leaders (ICL). ICLs have several roles, but essentially, we want you to be like the president of the class. Lead discussions, give opinions and be the first ones to respond when asked. ICLs will also take care of the Zoom after the lecture. If you're interested, please contact the TAs.
• **Textbook and material**: There is no official textbook for this program and lecture materials are posted at least 3 days in advance. Here are some free neuroscience-related resources available online for those of you with less background in whatever sub-fields:

Field/Class	Language	Content	Medium
Computational	JP	計算神経科学への招待	Free @Link
Neurobiology	EN	Principles of Neurobiology	Free @Link
Computational	EN	Neuromatch Academy Material	Free @Link

Academic Integrity Policy

This course does not count towards your academic degree for everyone, but as a program ran by an academic research institution, we hold very high standards regarding academic integrity. Any work presented or submitted in this course must be the product of your original effort. When you incorporate the works, words, or ideas of another, you must provide a proper form of citation. Violation of the academic integrity policy may result in dismissal from the course.

Frequently Asked Questions

Q: How much is it?
A: It's Free.

Q: Is it going to be 100% online?
A: We are currently seeking options to make it hybrid, but in any case, we will leave the option to complete the course 100% online.

Q: Do I need to score above 80% for completion?
A: No, you are required to ATTEND 80% of lectures (i.e. don't miss classes more than 7 times). Separately, a GRADE of below 40% (i.e. less than 48 pts) would result in an incomplete.

Q: Do you accept students from high school?
A: We will not be able to accept high school students due to space limitations and advanced materials/contents.

Q: Do you accept students from the industry?
A: We will consider applicants with adequate academic training (i.e. college degree) but due to the space limitations priority is given to current university students.

Q: Where is the appendix?
A: They are only available to accepted students.

Q. Is the paper report (scientific research paper review) of the application a general review of a research field or a critical review of a single paper?
A. It should be a rough summary followed by a critical review of a single paper of your choice. Also, try to avoid papers from your current or previous lab.