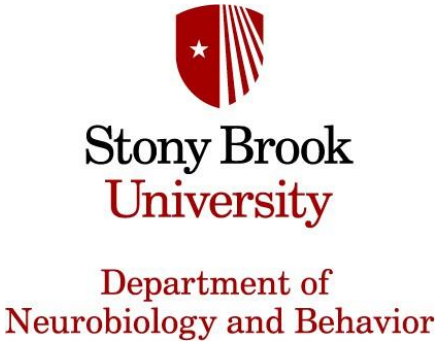
Stony Brook University
Department of Neurobiology and Behavior
Master of Science Program in Neuroscience
HANDBOOK / Program Guidelines and Requirements
Updated Summer 2024



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INTRODUCTION

The MS Program in Neuroscience at Stony Brook University prepares students to conduct, analyze and communicate neuroscience research. Students will be exposed to advanced neuroscience research techniques, approaches and theory through coursework and mentored lab research, culminating with the MS degree in Biomedical Sciences – Neuroscience track.

This handbook serves to provide an overview of the program for new students and summarizes degree requirements established by the Program and the Graduate School. Follow links to see full details of Graduate School policies, explore SBU resources, and other relevant information.

ADVISING / MENTORSHIP

Students' primary advisor at the start of the program will be the Director of the Program. The Director will communicate with each incoming student prior to the initial registration for the purposes of planning specific course requirements and deciding in which laboratory to complete their research practicum. The Director will meet with students during each semester to monitor progress and plan remaining curriculum.

MS Students will learn about lab research requirements in their first course, NEU 501: Introduction to Neuroscience Research, and are expected to find a faculty lab to work in by the end of their first full semester (generally the end of the Fall semester). Students are advised not to reach out to faculty for potential lab placements prior to this course.

There are over 50 training faculty involved in the MS Program that together offer a broad choice of advisors and research topics from which to choose. About half have primary appointments in the Department of Neurobiology and Behavior. Others have primary appointments in university departments of Biochemistry, Medicine, Neurology, Pharmacology, Physiology and Biophysics, Psychology, Psychiatry, and others or in off-campus departments at Brookhaven National Laboratory and Cold Spring Harbor Laboratories. Broadly, faculty research interests include Biophysics and Cellular Neurobiology, Molecular Neurobiology, Integrative and Behavioral Neurobiology, and Computational/Theoretical Neuroscience.

Once labs are chosen, students will notify both the MS Program Director and the Program Coordinator via email who their advisor/mentor will be for the remainder of the program. The Program Director will remain an advisor for course and degree completion requirements until graduation, however thesis work will be conducted in conjunction with the mentoring lab.

COURSE OF STUDY / DEGREE REQUIREMENTS

Flexibility exists to suit individual student needs and career ambitions. Core concepts and skills are taught through a series of required courses, with the remaining coursework consisting of advanced electives and special topics courses selected in consultation with the student's advisors. A total of at least 30 graduate credits with a cumulative GPA of 3.0 or greater are required for the MS degree. Of this, at least 8 credits must be earned in four Core Areas: Cellular and Molecular Neuroscience; Systems Neuroscience; Computational Neuroscience; Neuroanatomy. Students must also complete 4 credits in seminar courses designed to enhance reading, writing and presentation skills.

Course	Credits	Term	Area
NEU 521: Introduction to Cellular Neuroscience	3	Fall	Cellular & Molecular
NEU 522: Introduction to Molecular Neuroscience	3	Fall	Cellular & Molecular
NEU 531: Sensory and Motor Systems	2	Spring	Systems
NEU 532: Neural Plasticity, Learning and Memory	2	Spring	Systems
NEU 547: Introduction to Neural Computation	3	Fall	Computational
BNB 567: Statistics and Data Analysis I	2	Fall	Computational
NEU 536: Intro to Computational Neuroscience	2	Spring	Computational
BNB 568: Statistics and Data Analysis II	2	Spring	Computational
BNB 560: Intro to Mammalian Neuroanatomy	1	Spring	Neuroanatomy

Research skills are at the center of the program and all students are required to complete a minimum of 10 credits of research related courses comprised of Introduction to Neuroscience Research, Neuroscience Research Practicum, and Neuroscience Thesis work. In these courses, students will be introduced to innovative neuroscience research techniques through participation in ongoing research in the laboratory of a Department of Neurobiology and Behavior or associated faculty member. These studies form the basis of a written Master's Thesis that is required at the culmination of the program.

While most courses are offered in Fall and Spring semesters, some courses are offered in the Summer Session, including the introductory course, NEU 501. It is suggested that all students enroll in at least 0 credits for NEU 548 during summer session if they are working in labs. A full list of BNB and NEU courses can be found in the Graduate Bulletin and are listed by Core Courses and Elective Courses on our website.

See **Appendix I: Sample Course Schedules** and **Appendix II: Graduation Checklist** for more details. Note that course electives may be substituted in sample schedules at the discretion of the Program Director.

GRADUATE SCHOOL POLICIES

The Stony Brook University Graduate School is the governing body that coordinates the written Policies and Procedures for all graduate programs, including registration requirements, academic standing, grading policies, and taking a semester off. The Graduate Bulletin includes student policies, degree requirements, and a list of all graduate courses and programs at the University. While the MS Program in Neuroscience has its own guidelines, they ultimately fall within the scope of the Graduate School Policies and degree requirements.

The Graduate School has a helpful Current Student Resources page where they publish a detailed Academic Calendar with deadlines, forms for adding/dropping courses late & requesting a leave of absence, and many additional resources for graduate students. Listed is also a helpful Road Map for New Students to follow when first arriving at Stony Brook which includes information about orientation, housing and obtaining New York residency.

See **Appendix III: Graduate Student Campus Resources** to view a list of online and campus resources available to Graduate Students.

TIME TO DEGREE

Students typically begin their studies in the Summer Session with their cohort of incoming students. This timeline enables students to rapidly initiate thesis research in labs. Students with strong backgrounds and advanced research skills can potentially complete the program in 18 months. Most students complete the program within 24 months. Part-time options are available, although it is expected that all students will complete the degree within a three-year period.

Full-time students in the Masters of Science in Neuroscience Program will take a minimum of 9 credits per semester. Students finish their degree within 1.5-2 years, on average.

Course plans vary slightly by student, and some students may take more than 30 credits before they have completed all additional degree requirements. In addition to completing at least 30 credits of coursework, students must complete a written research thesis. The amount of time the research and writing takes may also vary between students.

TUITION / FEES

Details on tuition/fees can be found here:
Bursar's Tuition & Fees information – See Graduate tuition rate table.

FINANCIAL AID / TEACHING ASSISTANTSHIP

While the Master's Program in Neuroscience does not directly offer financial aid, we are often able to facilitate Adjunct Teaching Assistantships or other short-term jobs for students with the Undergraduate Biology department once students arrive on campus. In 2020 the TA positions offered $2100 per term + a tuition waiver for 1 class (often 4-6 credits), and a Grader earned $900/semester. Occasionally advanced MS students receive support from their lab. Additional Graduate Admissions and Financial Aid information can be found on the Graduate School website.

THESIS REQUIREMENT

Thesis requirements will be detailed in NEU 501/502 and by the MS Program Director. The written final thesis must be approved by their committee of 3: the MS Program Director, the student's mentor, and another committee member. The third committee member needs to be an approved PiN faculty member (see website for faculty list) which the student may choose in consultation with their mentor. Students should send all three thesis readers an electronic copy of the thesis for comments and edits. Students should give the faculty at least 2 weeks to read the document and should allow themselves 1 week for edits before it receives final approval. Theses should be finished and have final approval by all 3 committee members by the end of the semester of graduation so that the MS Graduate Coordinator can complete degree completion paperwork with the Graduate School on time. The final version of the thesis should be submitted to the MS Program Director and the MS Graduate Coordinator via email.

THESIS FORMATTING GUIDELINES

A thesis template can be found on the Graduate School website as well as extensive thesis preparation details (all sections may not apply to your thesis). In short, please use the following recommendations:

- The thesis should include a title page, signature page, abstract page, dedication (optional), table of contents, list of figures/tables/illustrations, acknowledgements (optional), main text, references, index (optional), appendix (optional).
- Arial or Times New Roman size 12 single (preferred) or double spaced with 1-inch margins.
- Use lower case Roman numerals for preliminary pages and Arabic numerals for main text.

- Do not use italics or punctuation for page numbers.
- Title page does not get a page number.
- Avoid reproducing copyrighted materials (e.g. pasting in figures from published work), as if they are included you must obtain permission to use the copyrighted material.

GRADUATION PROCESS

The following are suggested steps for a student who knows the semester they intend to graduate:

1. **Enroll in credits for the final semester.**
   Students must enroll in a minimum of 1 credit in their final semester, unless that semester is winter or summer, in which case domestic students may enroll in 0 credits. Students in their final semester will register for NEU 549 Research Thesis instead of NEU 548 Research Practicum. See the Graduate School page on awarding graduate degrees for more details.

2. **Apply for Graduation through SOLAR.**
   (see Graduate School Academic Calendar or the appropriate semester graduate calendar from the Office of the Registrar for deadlines)

3. **Inform Program Director and Coordinator of your plans a semester ahead of time (if possible).** Coordinator will then verify that you will have everything complete by the end of your intended graduation semester using the degree checklist (see Appendix II: Graduation Checklist).
4. **Complete thesis and obtain committee approval.**

5. **Let the Program Director & Coordinator know if you plan to attend Commencement and associated Biology Convocation ceremony.** (So we can be there to celebrate you!)

6. **Complete the Student Exit Survey.**
   A survey link will be sent to you by the Program Coordinator around the end of the semester you intend to graduate. This short survey asks you to tell us your future plans and helps us celebrate your accomplishments!

DEPARTMENT SEMINARS AND EVENTS

Prominent outside speakers are invited to visit our department and centers to discuss their work in a formal seminar during Fall and Spring semesters. Students may get credit for attending through course BNB 697, “Neuroscience Seminar Series.”

In the Fall Semester, the first six seminars are organized around a specific field of basic Neuroscience Research. The last four seminars of the Spring Semester are organized to learn about the most cutting-edge approaches to the study of the Neurobiology of Diseases. All other seminars are presented by speakers whose work covers several aspects of brain research, from molecular to cognitive neuroscience. These weekly seminars are part of the training for students enrolled in the Program in Neuroscience and provide an opportunity for students and faculty to interact with outstanding Neuroscientists. Students are expected to regularly attend the seminar series events regardless of their enrollment in the formal seminar related courses.

Seminar speakers will be announced via emailed invitations and the schedule updated online. Students will also receive emails at their stonybrook.edu email address about Graduate School Professional

Development events, job and fellowship opportunities, Department seminars, and other department events. View other current updates on the department Twitter (@SBUNeurobiology) or website.

GENERAL OFFICE / LAB POLICIES

Lab mentors/Principal Investigators (PI's) will have their own procedures about sharing lab space and department resources. They will instruct students on getting keys, building access (through student ID card), conference travel, or anything else non-course related. Students may need to communicate with the administrative assistants in the main office to request use of conference rooms, borrowing laptops/cords, sending and receiving packages, etc.

CONTACT INFORMATION

Students may contact the MS Program Director or Program Coordinator at any time with questions or concerns about their experience as a student. The Coordinator can help locate resources on campus and help with the logistics of carrying out a process, but most research and course-related questions can be directed to MS Program Director.

MS Program Director:
Dr. Mary Kritzer
Mary.Kritzer@stonybrook.edu

MS Program Coordinator:
Dr. Lindsey Czarnecki
Lindsey.Czarnecki@stonybrook.edu

Appendix I: Sample Course Schedules

Sample Schedule I: Molecular-Focused
Sample Schedule II: Cellular and Systems-Focused
Sample Schedule II: Computational-Focused
Please note that full time status is 9 credits.

Sample Schedule I: Molecular-Focused	Credits
Summer Year 1	
NEU 501: Introduction to Neuroscience Research	3
Fall Year 1	
NEU 502: Reading, Writing and Speaking Neurobiology	2
NEU 522: Introduction to Molecular Neuroscience	3
BNB 567: Statistics and Data Analysis I: Foundations	2
NEU 548: MS Research Practicum in Neuroscience	4
BNB 697: Neuroscience Seminar Series	1
Spring Year 1	
NEU 531: Sensory and Motor Systems	2
NEU 532: Neural Plasticity, Learning and Memory	2
BNB 560: Introduction to Mammalian Neural Anatomy	1
NEU 548: MS Research Practicum in Neuroscience	6
BNB 697: Neuroscience Seminar Series	1
Summer Year 2	
NEU 549: MS Thesis Research in Neuroscience	3
Total (including electives)	**30**

Sample Schedule II: Cellular and Systems-Focused	**Credits**
Summer Year 1	
NEU 501: Introduction to Neuroscience Research	3
Fall Year 1	
NEU 502: Reading, Writing and Speaking Neurobiology	2
NEU 521: Introduction to Cellular Neuroscience	3
BNB 567: Statistics and Data Analysis I: Foundations	2
NEU 548: MS Research Practicum in Neuroscience	4
BNB 697: Neuroscience Seminar Series	1
Spring Year 1	
NEU 531: Sensory and Motor Systems	2
NEU 532: Neural Plasticity, Learning and Memory	2
BNB 560: Introduction to Mammalian Neural Anatomy	1
NEU 548: MS Research Practicum in Neuroscience	6
BNB 697: Neuroscience Seminar Series	1
Summer Year 2	
NEU 548: MS Research Practicum in Neuroscience	3
Fall Year 2	
NEU 549: MS Thesis Research in Neuroscience	3
Electives	3
Total (including electives)	**30+**

Sample Schedule III: Computational-Focused	**Credits**
Summer Year 1	
NEU 501: Introduction to Neuroscience Research	3
Fall Year 1	
NEU 502: Reading, Writing and Speaking Neurobiology	2
NEU 521: Introduction to Cellular Neuroscience	3
BNB 567: Statistics and Data Analysis I: Foundations	2
NEU 548: MS Research Practicum in Neuroscience	4
BNB 697: Neuroscience Seminar Series	1
Spring Year 1	
NEU 531: Sensory and Motor Systems **OR** NEU 532: Neural Plasticity, Learning and Memory	2
NEU 536: Introduction to Computational Neuroscience	2
BNB 560: Introduction to Mammalian Neural Anatomy	1
BNB 568: Statistics and Data Analysis II: Applications	2
NEU 548: MS Research Practicum in Neuroscience	4
BNB 697: Neuroscience Seminar Series	1
Summer Year 2	
NEU 548: MS Research Practicum in Neuroscience	3
Fall Year 2	
NEU 547: Introduction to Neural Computation	3
NEU 549: MS Thesis Research in Neuroscience	3
Total (including electives)	**30+**

Appendix II: Graduation Checklist

MS in Neuroscience Degree Requirements Checklist

Administrative checklist used for degree completion; listed here for optional student reference.

Student Name:	**Entry Semester:**
SBU ID:	**Anticipated Grad. Semester:**
Mentor:	**Communications:**

- ☐ At least 8 credits from, with at least one taken from each category:
  - ☐ Cellular & Molecular: NEU 521, 522
  - ☐ Computational: BNB 567, 568, NEU 536, 547
  - ☐ Systems: NEU 531, 532
  - ☐ Neuroanatomy: BNB 560
- ☐ 4 credits from seminar courses (NEU 502, BNB 697)
- ☐ 10 credits in research courses (NEU 501, 548, 549)
- ☐ 30 total credits in graduate courses (500-600 level) (Note a C grade is required to receive credit)
- ☐ Cumulative 3.0 GPA in graduate courses
- ☐ Completed within the 3 or 5-year time frame (depending on FT or PT status)
- ☐ Registered for at least 1 graduate credit if graduating in spring/fall semesters; can register for 0 credits if graduating in winter/summer semesters
- ☐ Informed the Graduate Program Coordinator and Program Director of plan to graduate and student plans for attending commencement events
- ☐ Completed and approved thesis. Date committee approved:
- ☐ All grades assigned (no blanks or outstanding "I" grades)
- ☐ Exit Survey (Google Form) completed
- ☐ Completion of MS Degree Requirements form signed and sent to the Graduate School

Additional Notes:

Signature of Person Verifying Checklist: Date:

Appendix III: Graduate Student Campus Resources

The Graduate School has a helpful Current Student Resources page where they publish a detailed Academic Calendar with Deadlines, Forms for adding/dropping courses late and requesting a leave of absence, and many additional resources for graduate students. Listed is also a helpful New Student Road Map to follow when first arriving at Stony Brook which includes information about orientation, housing and obtaining New York residency.

Here is an image sample of links on the Graduate School page:

Academic Resources

- Academic Calendar & Deadlines
- Doctoral Consortium
- Doctoral Dissertation & Recitals
- Doctoral Hooding How-To
- Forms
- Graduate Bulletin
- Graduation Information
- New Student Roadmap
- Orientation Information
- Programs & Departments
- Theses & Dissertations Guidelines

Financial Resources

- Annual Graduate Awards
- Campus Fellowships
- Child Birth Accommodation Policy
- External Funding Opportunities
- Financial Aid
- GSO Funding Opportunities
- Student Employment
- Student Employee Health Benefits
- Tuition & Fees
- Travel Procurement Guidelines for Graduate Students

Campus Resources

- Career Center
- Counseling & Psychological Services
- Graduate Student Advocate
- Graduate Student Organization
- GSO Survival Guide
- Parking & Transportation
- SB Child Care Services
- Stony Brook Libraries
- Student Health Services
- Student Resource Directory
- Visa & Immigration Services
- Writing Center

Here is a list of additional, commonly-requested resources & notes for our current students:

- Our department may email you about events, upcoming deadlines, student resources, etc., or you can catch up with news on Twitter @SBUNeurobiology.

- The SBU Center for Inclusive Education promotes professional development and fosters diversity and inclusion by providing opportunities for community events, fellowships, mentoring relationships, and other resources

- Student Counseling and Psychological Services. CAPs has online counseling available for free to all enrolled students.

- There is a Food Pantry on campus, whose website also lists other local food pantries and food insecurity resources. You can also use the Feeding America website to find local food resources in other parts of the country.

- More Information specific to New Student Insurance and Health Forms is found on the Student Health Service site.

- The Office of Diversity, Inclusion and Intercultural Initiatives on campus provides many resources, including this list of programs, organizations, and events on campus that foster diversity, and SBU's Caring, Respect, Civility website.

- The SBU Center for Prevention and Outreach has many resources for students including for sexual violence and mental health. Their office has also compiled Self Care resources, including free coloring pages, fitness videos, and other tips.

- University Police Department resources on campus safety, including SB Guardian app and the Walk Service Program for those who would like company when travelling between points on campus at night. You can also stay up to date on campus news and alerts.

- If you have a physical, hearing, vision, cognitive, or psychological disability, you can receive accommodations from the Student Accessibility Support Center for academic, housing, and temporary conditions.

Note that student employees can get disability accommodation help for their jobs via the ADA specialist at the Office of Equity and Access. This Office also handles all claims of discrimination for students, staff, and faculty.