

## **Neuroscience Institute Undergraduate Honors Thesis Guidelines and Requirements**

### **Why complete an Honors Thesis?**

The honors thesis provides students with opportunities to engage in scholarship and professional activity that cannot be paralleled by any classroom experience. Preparing a thesis allows students to explore a topic thoroughly, generate new knowledge and contribute to their fields of study. The thesis can satisfy intellectual curiosity, promote creativity and intellectual maturation, and expose students to expectations similar to those in graduate school, professional school and various career positions. The thesis encourages students to develop several important academic and professional skills, such as critical analysis, oral and written communication, problem solving, and time management. The thesis also affords students the opportunity to develop a professional working relationship with their professors which can help to enrich their intellectual development. The thesis improves student marketability by providing students with advanced academic experience, detailed meaningful reference letters from their mentors, and tangible products to show admissions committees and prospective employers.

### **Eligible students**

Junior or senior honors students who have completed at least three upper division classes. Non-neuroscience majors are eligible. Non-honors students who meet the Honors College requirements (i.e., minimum 3.3 GPA and in good standing) are also eligible. Students who do not meet these requirements may submit a petition to the Director of Undergraduate Studies to waive the requirements. This petition should include a letter of recommendation from the prospective mentor.

### **Eligible mentors**

Any permanent Core or Associate Neuroscience Institute Faculty member may supervise an honors thesis in neuroscience.

### **The product**

The honors thesis will be approximately 20 double-spaced pages with 1 inch margins (exact length may vary).

#### Model 1: An empirical project

In this option, students collect or analyze original data to address a research question. The written product includes an Abstract, Introduction, Methods, Results (including figures and legends), Discussion, and Reference Section. The amount of time devoted to the data collection, analysis, and writing is more substantial than that expected in a 1-semester class. The mentor determines whether a research proposal is necessary and evaluates the proposal if submitted.

#### Model 2: A literature review

In this option, students write a critical analysis of published empirical literature on a particular topic in neuroscience. This review summarizes a body of information and

provides an original synthesis that organizes the information in a novel way (e.g., a new interpretation of the findings, a timeline of the progression of knowledge, new emerging themes). The goal is for the writer to demonstrate comprehensive sophisticated knowledge of the current literature on a topic.

**Timeline**

Students typically apprentice in a research laboratory for at least 1 semester prior to considering work toward a thesis. The empirical thesis project usually takes 2-4 semesters to complete and the literature review 1-2 months. The duration depends on many factors, such as the amount of time needed to 1) read the relevant literature, 2) develop a research question or literature review topic, 3) obtain approvals, if needed, from the Institutional Animal Care and Use Committee (IACUC, for research involving non-human animals) or Institutional Review Board (IRB, for research involving human participants), 4) become proficient with necessary bench and literature research skills, 5) conduct the research and analyze results, and 6) write the thesis.

Students are expected to meet regularly with their faculty mentors to set goals and deadlines, discuss progress and provide feedback.

**Evaluation**

The thesis will be evaluated by the research mentor and by a second reader selected by the mentor. The mentor will work with the second reader to set deadlines for the submission of the thesis to the second reader and for the second reader to submit the evaluation to the mentor. Both the mentor and reader will use the following checklist to evaluate the thesis. The advisor and second reader will consult with each other to determine the final grade, and the Director of Undergraduate Studies will determine the final grade in cases where the Advisor and Second Reader cannot agree.

Please provide a rating of 1 = excellent, 2 = satisfactory and 3 = unsatisfactory for the following:

Skill	Rating	Comment
Demonstrated an understanding of scientific literature.		
Critiqued and analyzed the work of others in a scientific context		
Demonstrated an understanding of scientific terminology		
Used concepts in neuroscience to describe, explain, and evaluate phenomena and to generate new ideas		
Demonstrated understanding of the scientific method		
Communicated effectively in written form		
Demonstrated understanding of results and their interpretation (applies to empirical theses only)		

The thesis was free of typos and grammatical errors		
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Recommended grade: \_\_\_\_\_

### **Coursework and deadlines**

Students may elect to enroll in NEUR 4870 - Honors Thesis I during the semesters prior to completing their thesis, if they are actively engaged in thesis activities (typically, laboratory research). Students are *required* to enroll in at least 1 credit hour of NEUR 4880 - Honors Thesis II in the semester they intend to complete their thesis (typically, laboratory research and the writing of your thesis). The exact number of credit hours and whether to enroll in 4870 depends on variables such as the amount of room in the student's schedule, financial constraints, and/or mentor requirements. A combined maximum of 5 credit hours between NEUR 4870 and NEUR 4880 can be applied to your neuroscience-related electives major requirement (Area G3).

Students must notify the Honors College of their intent to conduct an honors thesis by completing the online [Intent to Conduct a Thesis Form](http://honors.gsu.edu/intent-conduct-honors-thesis/) (<http://honors.gsu.edu/intent-conduct-honors-thesis/>), which requires that students 1) identify the faculty member who has agreed to supervise their project, 2) write a 200-word summary of their project, and 3) provide a tentative title for their project. If a student needs to register for 4870 or 4880, then this form is due **April 1** for summer registration, **August 1** for fall registration, and **December 1** for spring registration. Students who do not need to register should submit this form as soon as they begin the thesis. \*NOTE: Students MUST register for at least 1 credit hour of 4880 the semester that they intend to complete their thesis.

Students who receive a passing grade must notify the Honors College that they have successfully completed their honors thesis by completing the [Certification of Successful Completion Form](http://honors.gsu.edu/certification-successful-completion-honors-thesis/) (<http://honors.gsu.edu/certification-successful-completion-honors-thesis/>). This form is due by **the last day of final exams during the semester in which the thesis is completed.**

### **Required attendance at Honors Thesis Sessions**

Students are required to attend three 2-hr sessions led by the Honors College Thesis Team each semester that they are working on their honors thesis. The three sessions are held at the beginning, middle and end of the semester. The last session is the Thesis Pitch, which is an oral competition event where students have 3 minutes to communicate the importance of their research. Presenting at the Thesis Pitch is voluntary, but attendance is required.

### **Honors College support**

Honors College students participating in Honors Thesis are eligible to borrow a laptop computer from the Honors College for the semester, contingent on availability. These students may also apply for financial support to present at conferences and purchase supplies for their research. In addition to the three required sessions, there are several

workshops held in the Honors College each semester to provide support to Honors College students engaged in research and theses activities. The Faculty Associate for Research and Theses and the Research Program Coordinator are available to advise students and their mentors.

**Questions**

Contact the Neuroscience Institute Director of Undergraduate Studies, the Honors College Undergraduate Research Program Coordinator, and/or The Honors College Faculty Associate for Research and Theses.

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