

Advanced Neuroscience Research I (NSCI 411)

Fall 2020

Lecture: TR (3:00-4:20), Science Center 1135

Lab: W (12:00-2:50), Science Center 1026

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Office Hours: Wednesday 1:00-3:00pm &
by appointment; online only [via Zoom](https://zoom.us)
(calendly.com/profrootluna)

Course Description and Design

An interdisciplinary course in which students with different academic majors work together as a team to complete a self-designed neuroscience research project supervised by the instructor. This course is the first half of the capstone project for the Neuroscience minor program.

regarding your understanding of the discipline, critical evaluation of the primary literature, collaborative research, and professional communication. The second is to contribute to your understanding of vocation wiques

- think creatively about a problem and trouble-shoot experiments
- obtain specific information from the primary neuroscience literature and apply it toward an experimental research project
- summarize the pertinent information in scientific journal articles
- write a formal research proposal
- work independently as a researcher
- work collaboratively with your peers to execute excellent research
- discuss the concept of calling/vocation
- practice habits of vocational reflection (e.g., developing and considering a clearer understanding of interests, strengths, values, and how these can be applied to professional contexts)
- research professional and graduate school trends within a specific academic department or division
- participate in an experiential learning component (i.e., collaborative research)

the field; at the same time, this project will ultimately be completed by the students. In addition, this is a collaborative project which means that every student in the course is expected to contribute equally to this work. Just as a chain is only as strong as its weakest link, this collaborative project truly requires a team-based approach. However, each student has a different skill set and background, thus it is expected that each student will contribute differently to the project.

This is a design and discovery process. To do this well, we need exceptional ethics, diligent work habits, good listening, and pro-learning discussions that allow for different insights while coming to shared perspectives. We also need to be flexible, adaptive, maintain a sense of humor, be able to see possibilities when we face problems, acknowledge our limits and mistakes while working to minimize them, work hard individually on individual assignments, and come together to collaborate when appropriate to create a vibrant learning community. You will need to attend to the details of our project, even when not “in class.” As a result, you will be required to check your email daily for messages from me or your peers regarding the course project. Each student and groups of students will have specific responsibilities within our larger project; in order to have a successful research experience, every member of the team will need to be fully engaged.

Student & Faculty Characteristics and Expectations

Each student enrolled in this course has the academic ability and intellectual interests that will make for an exciting process of group and individual discovery. As a hands-on research experience and a learning community, we will be successful in embodying the following characteristics:

full attendance & partici

success of our project depends on everyone, and I expect you to take the responsibility seriously. Living out the qualities listed above will help us accomplish our purpose. Specifically, the embodiment of these standards includes (but is not limited to) the following:

Organize your life so that you can attend class regularly and fulfill your out-of-class responsibilities on time. This is particularly relevant when it comes to data collection. High quality experimental research requires high quality data collection, which requires a substantial amount of time. We will try to do much of our work together during our class meeting times, and we will not always meet during class time when we are involved in collecting data (which will involve around 6 hours of scheduled time outside of class). Overall, this course will require a substantial amount of outside work. Remember, Hope College defines each "credit hour" as requiring 4 hours of work; this figure will certainly be true in our course.

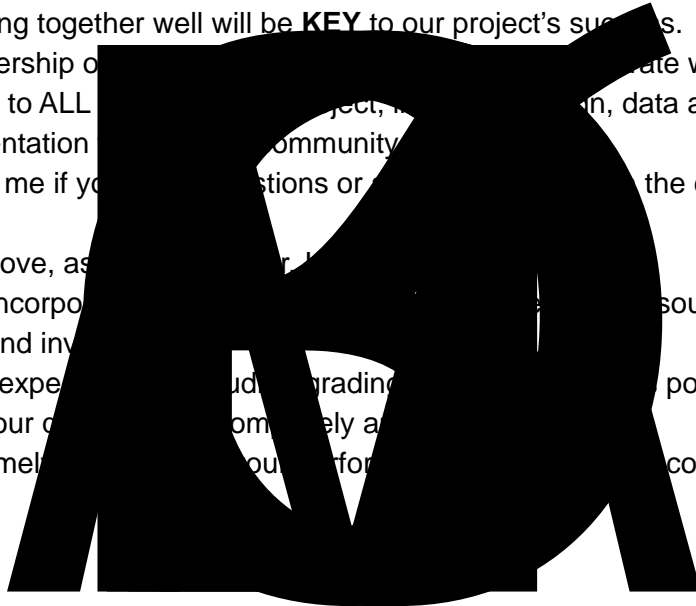
Be actively engaged in course activities and discussions. Come prepared, ask questions, and offer your thoughts and suggestions.

Be flexible! The amount of time it will take to design, analyze, and write a research report can be unpredictable. As such, the number of hours you can expect to spend on this course will vary from week to week. You should be prepared for the possibility of challenging assignments and/or deadlines as the semester progresses.

Listen and learn from those around you. You are part of a professional research team, and working together well will be **KEY** to our project's success.

Take ownership of your role. Communicate with each other and contribute to ALL aspects of the project, including data collection, data analysis, report writing, and presentation to the community. Meet with me if you have questions or concerns about the course.

Along with the above, as a professional researcher, you should:
Strive to incorporate all available resources that maximize your learning and involvement in the course.
Make my expectations of your performance as high as possible.
Answer your questions completely and promptly.
Provide timely feedback on your performance throughout the course.



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7th Ed. (2019). Washington D.C.: American Psychological Association). *The APA website, Purdue OWL, and Calvin College also have helpful writing resources online.*

Inclusive Excellence

In an ideal world, science would be objective. However, much of science is subjective and is historically built on a small subset of privileged voices. I acknowledge that many of the readings for this course were authored by white men. I acknowledge that it is possible that there may be both overt and covert biases in the material, including more recent work and empirical papers, due to the lens with which it was written, even though the material is primarily of a scientific nature. Integrating as diverse set of experiences is important for a more comprehensive understanding of science. Please contact me (in person or electronically) or [submit anonymous feedback](#) if you have any suggestions to improve the inclusivity of this course, including the materials we review together.

Furthermore, I aim to create a learning environment for you that supports a diversity of thoughts, perspectives and experiences, and honors your identities (including race, gender, class, sexuality, religion, ability, etc.) To help accomplish this:

If you have a name and/or set of pronouns that differ from those that appear in your official Hope College records, please let me know.

If you feel like your performance in the class is being impacted by your experiences, please don't hesitate to come and talk with me. I want to be a resource for you. If you have any concerns that you can also submit anonymous feedback (which may lead to the making a general announcement to the class, if necessary to address your concerns). If you prefer to speak to

Grading Scale:

	B+	87-89	C+	77-79	D+	67-69	F	below 60
A	94-100	B	83-86	C	73-76	D	63-66	
A-	90-93							

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Some of our work will be done online, as it will allow us to see one another face to face without masks. If you miss a class or lab for an excused absence (illness, family emergency, or official Hope College activity), you need to take the initiative to consult with your peers and with me to find out any relevant content and details you have missed. Any absence from this course has the potential to negatively affect your grade; you must assume all of the responsibility to communicate with me and provide documentation for your absence. Note that, whenever possible, you should contact me by phone or by e-mail in advance of missing a meeting.

You will have various research responsibilities, which will include developing and implementing our research protocol, being prompt in preparing for participants, and diligently recording your work in our shared space both physically and online. Much of our research work will happen throughout the week (not just during our scheduled

the original papers will be uploaded to Moodle as a

GRFP Final Proposal (11/24)

A Note About Late Work

As our work this semester is a team effort, all participants depend on the timely work of others, be it protocol development, written work, data collection, or data reduction and analysis. Thus, assignments are due at the *beginning* of the class period unless otherwise explicitly stated on the assignment and on moodle. If your work is late (i.e., after the beginning of the class period), you will lose 20% per day. (For example: Our class meets at 3:00pm on TR. If you turn in your assignment before 12:00pm on Wednesday, you lose only 20%. If you turn it in after 3:00pm on Wednesday, you lose 40%. This means work will not be accepted if it is more than 5 days late). Missing class the day an assignment is due does not alter the due date.

Disabilities

If you have questions about access or are a student needing accommodations for a disability, please contact me. I will ask that you connect with [Disability and Accessibility Resources](#) if you haven't already.

Tentative Schedule of Class Activities and Assignments:

The nature of the work we will do together requires flexibility and problem-solving. Therefore, I have outlined our class activities and assignments; however, it may be necessary to adjust this schedule.



Review List of Resources & Articles
supplied by LRL

*Lab: Developing
research plans*

Literature searches--Methods for online
data collection

Begin list of topics that are of
interest and that you need to learn
more about – bring to class

Aug. 27

Potential Papers to Read
Journal club presentation (Dr. Root
Luna)

Week 3

Sept. 1

Individual Meetings with LRL

Submit your list of at least 3 primary
literature articles of interest,
relevant to



Oct. 13	Discuss Data Collection; Discuss <i>Let Your Life Speak</i>	Read Chs 1 & 2—<i>Let Your Life Speak</i> Online Reflection
<i>Lab: Data Collection</i>	Learning R	
Oct. 15	<i>Journal Presentations 8 & 9</i> ; Discuss Data Collection	Journal Summary #8
Week 10	Data Collection & Cleaning	Monday at 11:59pm--Draft 1: Graduate Research Statement
Oct. 20	CVs	
<i>Lab: Data Collection</i>	MPA Abstracts & OSF	
Oct. 22	<i>Journal Presentations 10 & 11</i> ; Discuss Data Collection	Journal Summary #9
Week 11	Data Collection & Cleaning	
Oct. 27	Proposal Refinement & Discuss <i>Let Your Life Speak</i>	Read Chs 3 & 4— <i>Let Your Life Speak</i> Online Reflection
<i>Lab: Data Collection</i>	OSF Preregistration & Learning R	
Oct. 29	<i>Journal Presentation 12</i> ; Discuss Data Collection	Journal Summary #10
Week 12	Data Collection & Cleaning	Monday at 11:59pm--Draft 2: Graduate Research Statement
Nov. 3	Discuss college students' perceptions on calling	Hunter, Dik, & Banning, (2010) Online Reflection
<i>Lab: Data Collection</i>	Learning R	
Nov. 5	Data Cleaning & Processing	Journal Summary #11 (Optional)

Week 13**Data Collection & Cleaning**

Nov. 10

Prepare for Peer Review--Touch base on Zoom for 5-10 minutes re: Data Collection

Submit a Cover Letter or Personal Statement

Lab: GRFP
Proposal Panel
Review

Peer Review Panels Meet for One Hour Each

Nov. 12

Discuss *Let Your Life Speak*; Wrapping Up the Fall Semester; Looking forward

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