NEUR2010L Syllabus

Introduction to Neuroscience Principles Lab – A1 – 1cr

Fall 2026

Instructor Information

Instructor: Dr. Ian Krout, PhD

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General Course Information

Description

Students will learn fundamental techniques and methods in neuroscience from activities, experiments, and problem-based study of the neural substrates of animal behavior. This class is intended for Neuroscience Majors, and will serve as the foundational description of concepts that will be discussed in 3000 level lectures and research techniques to be applied in 4000 level labs and/or independent research projects in Neuroscience.

Course Learning Outcomes

1. Gain experience in collaborative research design, execution and data analysis.
2. Learn to communicate scientifically by creating and evaluating written lab reports and oral presentations.
3. Review lecture concepts with hands-on and real-world applications in experimental protocols.

Required Course Materials

Required course materials are a need for establishing and maintaining lab safety standards. All students will be required to wear appropriate PPE. Refusal to comply with proper PPE usage could result in a grade reduction and disciplinary action for violating the Georgia Tech Honor Code.

Lab attire: Students are required to wear **close-toed shoes** that cover your entire foot (i.e. no sandals, flip flops) and **long, intact pants** (i.e. no shorts or ripped jeans). Long hair should be tied back during class. Scarves, flowing sleeves and crop tops are prohibited in the lab.

PPE: **A lab coat, gloves, and safety goggles** are required. We will provide gloves and safety goggles when necessary, but, students are responsible for bringing their own lab coat.

a). Your lab coat should be 100% cotton in order to prevent cross-contaminaton outside the lab and provide a removable barrier for organic materials. You should assume that you will need your lab coat every week of lab (including the first week) – if a lab does not require lab PPE, your TAs will let you know beforehand.

Students will need access to a computer with Microsoft Excel and the ability to access the internet and our course Canvas page. All other course materials needed for successful completion of the course will be made available to students via the Canvas page.

Other Safety Procedures

1. **Cell phone use is not allowed unless explicitly stated, to prevent cross-contamination or exposure to potentially harmful chemicals. Please silence and put away your phones for the duration of lab.**
2. **No food or drink is permitted in lab under any circumstances.** Routinely having water bottles/food/drink out on your desk despite having been told not to do so will result in grade penalties!
3. At the end of the lab clean up your lab station. Report any mess left behind from previous sections to your TA. Properly dispose of garbage, biohazardous waste, and broken glassware in the indicated receptacles. If you are unsure of the proper way to dispose of something, ask your TA.
4. Report any chemical/biological spills and injuries to your TA immediately.

Grading Policy:

Lab grade

Participation & Homework	**35%**
Pre-lab Assignments (10)	**15%**
Lab reports	**35%**
Lab Report Rough Drafts (2)	10%
Lab Report Peer Review (2)	5%
Lab Report 1	10%
Lab Report 2	10%
3 Minute Thesis	**5%**
NeuroMinute	**5%**
Professionalism	**5%**

Late work: Late assignments will receive a 10% penalty for each 24 hours they are past due. (Note: this means if an assignment is even 5 minutes late then it will receive

a 10% late penalty. At 25 hours late this will incur a 20% late penalty, etc.) No assignment will be accepted more than 5 days late.

Description of Graded Components

Participation & Homework (35%)

Participation is required. Skills learned via hands-on engagement during labs cannot be meaningfully replicated outside of class time. If you are going to miss a lab, contact Dr. Krout, and your TAs as soon as possible to allow us to make necessary arrangements for your group members. Please contact your group members as well. **Participation will not only be assessed by your engagement during lab but also your completion of a 3-2-1 exit ticket. Prior to leaving each lab period students will write down on a note card 3 concepts they learned that period, 2 techniques they used that interested them, and 1 question they still have.**

1. ***Unexcused absences****:* Labs meet only once per week and we move through material quickly! There are no make-up labs for unexcused absences. An unexcused absence from lab results in a 5% reduction of your overall lab grade and the loss of participation points for the week**.**
2. ***Excused absences****:* Excused absences must be documented and may include illness, school organization scheduling conflicts, automobile accidents, jury duty if a full-time student, etc. Students with excused absences will need to perform an alternative assignment (written report). ***Students may only have one excused absence/one week of lab absences, even if it is excused***. The only exception is a letter from the Dean of Students.
3. **Arriving late or without proper PPE**: A student who is more than 20 minutes late to lab or in clothing that is not appropriate for safe engagement in the lab (as outlined above) will receive one warning. After this first infraction, if that same student is more than 5 minutes late to the start of lab and/or wearing lab-inappropriate attire, they will not receive participation points for the day.

Pre-lab assignments (15%)

Pre-labs will be posted on Canvas before the next lab to help to introduce the concepts being covered. They must be completed and submitted to Canvas by **11:59PM the day before your lab section meets.** Late pre-labs will be penalized 10% for every 24 hours it is late, even if it is only 5 minutes late!

Lab reports (35%)

Scientists communicate their experimental findings through written reports. You will write two (2) formal lab reports over the course of the semester, submitting an experimental design proposal, rough draft, peer evaluation, and a final draft for each one. Lab reports should be written in APA format, must be

submitted to Canvas, and are subject to late penalties. Each final draft should contain an abstract, an introduction, methods, results, discussion, and references. We will go over how to write a lab report in lab; there are also resources available on Canvas.

NeuroMinute (5%)

In addition to traditional written journal articles, scientists also communicate information in visual and oral formats. To provide opportunities to practice presentations, all students will be required to prepare a two-minute oral presentation of a current neuroscience topic (e.g. novel discovery, application, tool, controversy, etc.) and highlight one researchers currently working in this space using a 2 slide PowerPoint visual supplement. Lab sections will release NeuroMinute topic and presentation date sign-ups the second week of lab, and will be first-come first-serve. Failing to sign up for topics by week 3 of the lab will result in topics and dates being chosen for you. Good sources to find topics are Science Daily, Neuroscience News, The Scientist, and verified science writers on Twitter. The rubric for NeuroMinutes is posted on Canvas under the Rubric sidebar.

3 Minute Thesis (5%)

The idea of a 3 Minute Thesis stems from the graduate level academic competition where graduate students present their research to a non-specialist audience in just three minutes, using a single static slide to illustrate their points. Similar in format to the NeuroMinute, the 3 Minute Thesis is a visual and oral presentation to be completed independently on the data collected from 1 of the 2 Design Your Own Experiments completed over the course of the semester. You will prepare a three-minute oral presentation accompanied by a single PowerPoint slide, highlighting your experimental design, methods, results and conclusions from your chosen project. The focus for this presentation is your ability to effectively summarize complex data with oral and visual means. The rubric for the 3 Minute Thesis is posted on Canvas under the rubric's sidebar.

Professionalism (5%)

One of the goals of the introductory neuroscience lab, is to operationalize lessons from the field and introduce students to expectations of being in a science lab or similar professional setting. There are many factors that contribute to success in the lab, but one key is professional conduct. Professionalism, in the context of our course, includes being a collegial lab member. Students will earn this score through consistently being good audience members during classmates' NeuroMinute presentations and being attentive and engaged during TA presentations and lab activities. Students found to be consistently working in their laptops or on their phones during class activities and presentations will be given a warning by TAs and then will lose professionalism points. Each class (after the first)

during which a TA must remind a student to be actively engaged will result in a 0.5% reduction in this score.

Course Policies

Class-wide Attendance and Proper PPE Policy:
The lab can only function effectively if lab group members are punctual, working together and prepared prior to each class period. Lab safety is our highest priority, followed closely by a shared sense of educational goals in the lab. Individual penalties for late arrival and improper PPE are outlined above. But, to encourage a sense of community, shared compliance, and collegiality, after 10 (ten) instances of point docking (cumulative across the lab section), the entire section will lose participation points for the day each time any student is penalized.

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review Georgia Tech's Honor Code and the student Code of Conduct.

Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Plagiarism
Plagiarism will not be tolerated. Most of the work you will do in lab will be collaborative; however, **ALL WRITTEN WORK (Lab reports, pre labs, etc.) MUST BE WRITTEN IN YOUR OWN WORDS.**

Non-original ideas and information must be cited. Lab report figures may be shared within groups, but figure captions should be your own writing as well, even if your group carries out data analysis together. You may not use **any** group work previously written together in your lab report. Plagiarism will be reported to the Office of Student Integrity and may result in disciplinary action. Please refer to and follow the academic honor code. If you are concerned that something may constitute plagiarism, ask your TAs or instructors.

Use of AI (ChatGPT and similar tools):
Your work (and consequently your grade) in lab is about much more than getting the correct answers. This course values independent thinking, critical analysis, and genuine effort in your coursework. Assignments are intended to foster intellectual growth and strengthen essential skills. The use of digital tools and online resources to supplement your study is encouraged.

But, the objective of assessments is to gauge your understanding and application of the course material, not to rely on automated responses. Your engagement with the course materials, active participation in discussions, and independent work are fundamental aspects of the learning process.

Submissions found to be generated or heavily influenced by AI tools will be considered a breach of academic integrity and will be addressed according to the institute's policies on academic misconduct. Approach assignments as opportunities for personal growth and learning. If you require clarification or assistance, please reach out for guidance.

Core IMPACTS

Core IMPACTS is the University System of Georgia's General Education curriculum. If you are teaching a course that counts towards Core IMPACTS, you should include a syllabus statement about the Core area and associated career competencies. This resource developed by the Center for Excellence in Teaching and Learning and Online Education at Georgia State University includes template syllabus statements for each of the Core IMPACTS areas that you may adapt for your course.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The Student-Faculty Expectations articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Campus Resources for Students

APA Style resource: http://owl.english.purdue.edu/owl/resource/560/01/

Center for Academic Success: http://success.gatech.edu

- 1-to-1 tutoring: https://success.gatech.edu/tutoring/
- Peer-Led Undergraduate Study (PLUS): https://success.gatech.edu/tutoring/plus/
- Academic coaching: https://advising.gatech.edu/academic-coaching
- Communication Center: http://www.communicationcenter.gatech.edu
  - Individualized help with writing and multimedia projects

Student Mental Health and Wellbeing: Georgia Tech is committed to supporting and advancing the mental health and well-being of our students. If you or someone you know has a history of mental health concerns, is having current mental health difficulties, or if you are unsure and would like a consultation, a variety of confidential services are available.

National Suicide Prevention Hotline at 988.

The Office of the Dean of Students: https://studentlife.gatech.edu/dean-students/
Smithgall Student Services Building 2nd floor
Email: studentlife@studentlife.gatech.edu
Phone: 404-894-6367

Counseling Center: http://mentalhealth.gatech.edu
Smithgall Student Services Building 2nd floor
Phone: 404-894-2575

- Services include short-term individual counseling, group counseling, couples counseling, testing and assessment, referral services, and crisis intervention.
- Their website also includes links to state and national resources.
- *Students in crisis may walk in during business hours (8am-5pm, Monday through Friday) or contact the counselor on call after hours at **404-894-2575**.*

Belonging and Student Support: http://belonging.gatech.edu/studentsupport

Students' Temporary Assistance and Resources (STAR):
https://star.studentlife.gatech.edu/

- Can assist with interview clothing, food, and housing needs.

Stamps Health Services: https://health.gatech.edu
740 Ferst Dr NW, Atlanta, GA 30332
Phone: 404-894-1420

- Primary care, pharmacy, women's health, psychiatry, immunization and allergy, health promotion, and nutrition

Veteran's Resource Center: http://veterans.gatech.edu/
Phone: 404-385-2067

Georgia Tech Police: 404-894-2500

Non-Discrimination: Georgia Institute of Technology is committed to equal opportunity, a culture of inclusion, and an environment free from discrimination and harassment in its educational programs and employment.

Equal Opportunity, Compliance, and Conflict Management: https://eoc.gatech.edu/
RBI Paper Tricentennial Building, 4th floor
Phone: 404-894-5698