Course Syllabus

BIOS 4699 (Section: OBS) | Syllabus

Independent Research with a supervisor outside the School of Biological Sciences

School of Biological Sciences Instructor of Record:

Dr. Chrissy Spencer

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Office: Boggs 1-76A

Pronouns: she/her/hers

Office hours by appointment. Email me!

Course Description: Students will gain experience and practical training in modern approaches for biological research. Your research project will be designed, implemented, and analyzed in collaboration with the faculty mentor you have identified.

BIOS 4699 is a variable-credit (1-12) research-based course, where 1 credit = 45 hours. <u>Students cannot receive course credit for BIOS 4699 and also be paid for the same research hours.</u> To enroll in research for pay, instead request a permit for BIOS 4698.

Expectations:

- The student completes any required safety and ethical training to conduct the research.
- The student prepares a short proposal of the research project, graded by the faculty mentor.
- The student works throughout the semester on their project with the following time expectations:
  1. *Fall / Spring semesters: 1 credit = 3 hr/wk.*
  2. *Full Summer semester: 1 credit = 4.2 hr/wk.*
  3. *Short Summer semester: 1 credit = 9 hr/wk*.
- The student brings work-stopping problems to the immediate research supervisor and/or PI as they arise rather than waiting.
- The student may get help from others in the lab group when needed, but the project should be run by the undergraduate student.
- The student writes a final report on the research in the style of a relevant scientific journal, graded by the faculty mentor.

Independent research conducted under the guidance of a faculty member.

Class Administration: BIOS 4699 OBS students *working outside of the School of Biological Sciences* (e.g., CDC, Emory, GT School of Psychology) technically have two supervisors, the 'research supervisor' and the 'School of Biological Sciences supervisor'. The research supervisor will be the Principal Investigator who oversees the student's research (practically, students may work with graduate students or postdocs on a day-to-day basis). The research supervisor will serve as the primary director and assessor of the student during the research. The student is expected to work closely with the research supervisor regarding all activities. In addition, the research supervisor will work with the student to develop the reports, to assess the quality of these reports, and to assign an overall grade at the end of the semester.

In contrast, the School of Biological Sciences supervisor will act as the administrative manager of the program. Student contact with the Biological Sciences supervisor will likely be limited to emails, contacts through Canvas, and perhaps a few meetings during the semester if necessary. *However, students are encouraged to contact the Biological Sciences supervisor at any time, particularly if there are any concerns, issues, questions, or problems regarding the research program.* The Biological Sciences supervisor will help to ensure that the research proceeds properly for all parties involved.

Lab safety: Georgia Tech has a strict policy regarding appropriate clothing in laboratories where chemicals and organisms are used or manipulated. Students not conforming to the following requirements will be asked to leave the lab to acquire appropriate clothing. In the laboratory, students must wear

- **Long pants**.
- **Close-toed shoes** that cover the sides and top of the foot.
- **Lab coats,** when working at the bench. Lab coats must be 100% cotton and cover the wearer to the knees. Students are responsible for keeping their lab coats in good condition and reasonably clean so as to not create a hazard.
- **Safety glasses**, when working at the bench. Safety glasses must have side shields for splash protection and conform to the wearer's face. Glasses must be worn over prescription glasses and contact lenses. Georgia Tech Biology provides safety glasses for student use in the lab. Safety glasses prevent eye exposure to liquid reagents and breakables, as well as dangerous substances such as bacteria, toxins, acids or UV light.

Evaluation is based on student research and the ability to communicate that research in writing:

- Research portion (evidence that research is being conducted effectively)   80%
- Scientific writing portion (evidence that student can communicate research)
  - Research Proposal   5%
  - Final Report   15%

<u>All written documents should be single-spaced, 12-point font, with 1 inch margins on all sides.</u>

Research Proposals consist of a short plan of the project to be conducted. The proposal should be ~1 page long and include: a title, introductory background and justification, hypotheses or questions to be investigated, experimental design, data analysis, statement of expected results, and how the results are expected to address the proposed hypothesis or question.

      DUE: Due on Canvas by midnight Friday of the 3rd full week of classes (2nd full week in Summer)

Final report: Should be ~3 pages. The final report should include an abstract, introduction, methods, results, and discussion. Data should be appropriately summarized and provided in tables and/or figures with legends, as appropriate.

      DUE: Due on Canvas by midnight on the Final Instruction Class Day

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. For information on Georgia Tech's Academic Honor Code, please visit http://www.catalog.gatech.edu/policies/honor-code/ or http://www.catalog.gatech.edu/rules/18/.

Any student suspected of cheating, lying about course matters, stealing materials, plagiarizing, or helping others commit a violation of the Honor Code will be reported to the Office of Student Integrity, which will investigate the incident and identify the appropriate penalty for violations.

Note that plagiarism is the unattributed use of the words or ideas of others. Plagiarism includes reprinting the words of others without both the use of quotation marks and citation. As direct quotes are seldom used in scientific writing, you are expected to rephrase the words of others and provide the citation. Plagiarism will be referred to the Office of Student Integrity for adjudication. If you have any questions regarding plagiarism, please consult with the PI before you submit your work to the formal scrutiny of others, including the PI.

Accommodations

If you have learning needs that require some accommodations for you to succeed in this course, please contact the Office of Disability Services as soon as possible (disabilityservices.gatech.edu) to make an

appointment to discuss your needs and to obtain an accommodations letter. I will arrange to accommodate your learning needs based on their recommendations.

Inclusivity

As members of the Georgia Tech community, we are committed to creating a learning environment in which all of our students feel safe and included. Because we are individuals with varying needs, I rely on your feedback to achieve this goal. To that end, I invite you to enter into dialogue with us about the things we can stop, start, or continue doing to make our research group an environment in which every member feels valued and can engage actively in our community.

Academic Support

Georgia Tech offers a variety of free learning and communications support options. Learn about free tutoring resources at **success.gatech.edu**   **(http://www.success.gatech.edu/)** or at the Center for Academic Success's tutoring desk in Clough Commons 273. For assistance with revising lab reports or building and polishing a reflection or position piece, consult the Communications

Center (Clough Commons 447 or **commlab.gatech.edu**   **(http://www.communicationcenter.gatech.edu/)**).

Additional resources for academic support include:

- Center for Academic Success (success.gatech.edu)
  - 1-to-1 tutoring (**gatech.edu/1-1-tutoring**   **(http://success.gatech.edu/1-1-tutoring)**)
  - Peer-Led Undergraduate Study (PLUS) (**gatech.edu/tutoring/plus (http://success.gatech.edu/plus-sessions)**)
  - Academic coaching (**gatech.edu/coaching**   **(http://www.success.gatech.edu/academic-coaching)**)
- Residence Life's Learning Assistance Program
  - (**gatech.edu/learning-assistance-program**   **(https://housing.gatech.edu/learning-assistance-program)**)
  - Drop-in tutoring for many 1000 level courses
- OMED: Educational Services (**gatech.edu/programs/academic-support (http://omed.gatech.edu/programs/academic-support)**)
  - Group study sessions and tutoring programs
- Communication Center (**gatech.edu**   **(http://www.communicationcenter.gatech.edu)**)
  - Individualized help with writing and multimedia projects

- Academic advisors for your major (**gatech.edu** **(https://advising.gatech.edu/)**)

Personal Support

In your time at Georgia Tech, you may find yourself in need of support. Below are some resources available on campus.

- The Dean of Students, **studentlife.gatech.edu** **(http://studentlife.gatech.edu)** , 404-894-6367
  - Select "request assistance" to communicate with the Dean's office
  - Located in Smithgall Student Services Building on the 2nd floor
- Counseling Center: **counseling.gatech.edu** **(http://counseling.gatech.edu/content/home-page)** , 404-894-2575
  - Located in Smithgall Student Services Building on the 2nd floor
  - 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 404-894-2204.
- Students' Temporary Assistance and Resources (STAR):
  - **gatech.edu/content/star-services** **(https://studentlife.gatech.edu/content/star-services)**
  - Can assist with food, housing needs, interest-free emergency loans, and interview attire when you are on the job market.
- Stamps Health Services: **health.gatech.edu** **(https://health.gatech.edu/)** , 404-894-1420
  - Primary care, pharmacy, women's health, psychiatry, immunization and allergy, health promotion, and nutrition
- OMED Educational Services: **omed.gatech.edu** **(https://omed.gatech.edu/)** **(https://omed.gatech.edu/)**
- Women's Resource Center: **womenscenter.gatech.edu,** **(http://www.womenscenter.gatech.edu)** 404-385-0230
- LGBTQIA Resource Center: **lgbtqia.gatech.edu** **(https://lgbtqia.gatech.edu/)** , 404-385-2679
- Veteran's Resource Center: **veterans.gatech.edu,** **(http://www.veterans.gatech.edu/)** 404-385-2067
- Georgia Tech Police: 404-894-2500

Course Summary:

Date	Details	Due
Thu Jan 13, 2022	📝 **Syllabus and PI Confirmation** **(https://gatech.instructure.com/courses/250494/assignments/1001576)**	due by 11:59pm

Date	Details	Due
Fri Jan 28, 2022	📝 **[Research Proposal](https://gatech.instructure.com/courses/250494/assignments/1001580)**	due by 11:59pm
Tue Apr 26, 2022	📝 **[Final manuscript](https://gatech.instructure.com/courses/250494/assignments/1001578)**	due by 11:59pm