

Syllabus: C&S BIOL 198B – Honors Research in Computational & Systems Biology

Course Description:

Tutorial, 12 hours minimum in laboratory. Requisite: 198A. Continued reading and research that culminates in honors thesis under direct supervision of faculty member. Maximum of 8 units of courses 198A and 198B may be applied toward the major. Individual contact required. Letter grading.

Schedule:

There will be regular meetings with the faculty supervisor on a tutorial basis.

Learning Outcomes:

- Demonstrate critical thinking skills and familiarity with research techniques needed to successfully pursue a research project in computational and systemsbiology.
- Conceive and execute a research project upon which the student engages current methods and theory.
- Communicate original scholarly findings to peers both in oral and written form.
- Work productively with others as part of a research team.

Assignments/topics:

- Topics and reading list are to be chosen in consultation with the individual faculty supervisor.
- Students in 198A and 198B will be conducting research and working towards completing the three Capstone project deliverables—a 10-minute presentation, a poster, and an approximately 10 pages or longer honors thesis paper—which are due at the completion of 198B.
- At the completion of 198B, students will submit to their faculty mentor and to the CaSB Undergraduate Office the following Capstone Deliverables:
 - Presentation – The presentation should consist of approximately 10 slides that cover the following topics: Title, Background, Question that is being addressed by this research, Methods, Results, Conclusions, Future Directions, Acknowledgements. The presentation should be presented at the lab meeting of your host lab and recorded. The presentation can be done in person or remotely via video-conferencing. The recording should be filed with the CaSB Undergraduate Office.
 - Poster – The poster should be printed on a large (48" x 36") sheet. The Poster should contain a title, authors, abstract, figures of all results, conclusions, and references. A PowerPoint template is included.
 - Research Thesis – The research thesis should follow standard guidelines for a scientific publication. The paper should be at least ten pages single spaced. It should include the following sections: Title, Authors, Affiliation, Abstract, Introduction, Methods, Results, Conclusions, Acknowledgements and References. The references should follow the guidelines of a journal that is relevant to the research topic, and there should be at least ten references. The paper should also include at least four figures. Each of the four figures can contain multiple panels and should include a caption. Figures should be embedded within the text of the thesis rather than added to the end of the report. The final report should be submitted in pdf format.

Grading:

Grades are assigned by the student's faculty mentor, based on submission of the three Capstone deliverables outlined above. Letter grade only.

TO SUBMIT YOUR FINAL DELIVERABLES TO THE CaSB Undergraduate Office.

- Email your paper as a PDF (.pdf) document
- Email recording of lab presentation or a link to the recording
- Email an electronic copy of your poster (PDF, JPEG, etc.)

- Deliverables Due: 5:00PM, Friday of Finals Week

Please submit all documents to CaSB via Message Center.

Final Thesis Paper:

- Include your name and UID on the first page of the thesis paper.
- Turn-in your paper to your faculty mentor (either electronic or hardcopy).
- After obtaining your faculty mentors signature on the form, submit the form along with the final deliverables to CaSB via Message Center