**Advanced Statistics for Genomics**

**BINF 4650**

**SEMESTER YEAR**

**College of Computing and Informatics**

**Instructor Dr. Abigail Leavitt LaBella**

**Email** [**alabell3@charlotte.edu**](mailto:alabell3@charlotte.edu)

**Phone 704-687-2414**

**Office BINF 428**

**Office Hours By Appointment**

This syllabus contains the policies and expectations for the independent project of **STUDENT** for the **SEMESTER YEAR**.

**Course Overview**

This course is built around an individual or group project in the teaching, theory, or application of bioinformatics, genomics, or computational biology under the direction of a faculty member.

*Example project summary. This project will conduct computational analyses on 1,154 budding yeast genomes. Our lab has mined these genomes with machine-learning methods to understand how phenotype, genotype, and environment shape evolution. This project will leverage those genomes to ask additional questions about fungal metabolism.*

**Course Objectives**

* Articulate the research question or hypothesis addressed in the independent research project.
* Identify and deploy appropriate research methodologies for the project.
* Work independently and effectively in a research environment, including attending meetings and meeting deadlines.
* Communicate the results of your work confidently and constructively with other lab members, members of the scientific community, and the public.
* Develop discipline-replated skills, including coding, wet-lab work, and/or scientific writing.
* Practice critical scientific evaluation.

**Instructional Method**

The student and faculty will meet one-on-one once per week to outline goals and discuss progress. Additional meeting times can be requested.

Students will work independently or with other lab members on their research project for the allotted number of hours.

**Attendance**

The student is expected to attend the one-on-one meetings with the faculty or reschedule if conflicts occur.

The student is expected to attend (schedule permitting) the once-per-week lab meeting.

**Assignments**

***Weekly progress:*** (40% of the grade). The student will make sufficient progress towards the weekly goals set out by the faculty during the one-on-one meeting. This could include background reading, coding specific steps of the pipeline, and troubleshooting code.

***Formal presentation of results:*** (20% of the grade). The student must complete one or more of the following by the conclusion of the semester. Poster presentation at a research symposium (within or outside the University)

* An oral presentation
* A written research summary

***Final documentation:*** (40% of the grade). The student must also document progress and provide experimental documentation by the end of the semester. The experiment may not be complete but must be adequately documented to ensure future work can continue.

**Instructor tardiness**

If I am late in arriving to class, you must wait a full 20 minutes after the start of class before you may leave without being counted absent, or you must follow any written instructions I may give you about my anticipated tardiness.

**Changes to syllabus**

The standards and requirements set forth in this syllabus may be modified at any time by the course instructor. Notice of such changes will be by announcement in class or by email notice.

**Credit hours and student work**

Just like I spend time preparing and grading for this course, you are also expected to conduct out-of-class work. The standard formula for in-class (x) to out-of-class work (y) is y = 2 x . Therefore, for this 3 credit hour course, you should be prepared to spend 6 hours out of class each week reading, studying, and working on assignments.

**Classroom conduct**

Despite what you may think, statistics can get controversial! I will conduct this class in an atmosphere of mutual respect. I encourage your active participation in class discussions. Each of us may have strongly differing opinions on the various topics of class discussions. The conflict of ideas is encouraged and welcome. The orderly questioning of the ideas of others, including mine, is similarly welcome. However, I will exercise my responsibility to manage the discussions so that ideas and argument can proceed in an orderly fashion. You should expect that if your conduct during class discussions seriously disrupts the atmosphere of mutual respect I expect in this class, you will not be permitted to participate further.

**Disability accommodations**

UNC Charlotte is committed to access to education. If you have a disability and need academic accommodations, please send me your accommodation letter as early as possible. You are encouraged to meet with me to discuss the accommodations outlined in your letter. For more information on accommodations, contact the [Office of Disability Services](https://ds.charlotte.edu/) and follow the instructions of that office for obtaining accommodations.

**Non-discrimination**

All students and the instructor are expected to engage with each other respectfully. Unwelcome conduct directed toward another person based upon that person’s actual or perceived race, actual or perceived gender, color, religion, age, national origin, ethnicity, disability, or veteran status, or for any other reason, may constitute a violation of [**University Policy 406, The Code of Student Responsibility**](https://legal.charlotte.edu/policies/up-406). Any student suspected of engaging in such conduct will be referred to the Office of Student Conduct.

**Academic Integrity**

Science is collaborative! And Stack Overflow exists for a reason! That being said, you will only achieve the learning objectives in this class if you do your own work. Collaborative work, help on homework, and assistance is welcome and encouraged. HOWEVER, you must write up your final materials, cite any sources you use, and not copy directly from anywhere.

All students are required to read and abide by the Code of Student Academic Integrity. Violations of the Code of Student Academic Integrity, including plagiarism, will result in disciplinary action as provided in the Code. Definitions and examples of plagiarism are set forth in the Code and on the [Student Accountability & Conflict Resolution website](https://scai.charlotte.edu/academic-integrity). The Code is available from the Dean of Students Office or online at [legal.charlotte.edu/policies/up-407](https://legal.charlotte.edu/policies/up-407).  Additional resources are available on the [Student Accountability & Conflict Resolution website](https://scai.charlotte.edu/academic-integrity).

Faculty may ask students to produce identification at examinations and may require students to demonstrate that graded assignments completed outside of class are their own work.

**Preferred pronouns and names**

This course affirms people of all gender expressions and gender identities. If you prefer to be called a different name than what is indicated on the class roster, please let me know. Feel free to correct me on your preferred gender pronoun. If you have any questions or concerns, please do not hesitate to contact me.

**Course withdrawals**

Students are expected to complete all courses for which they are registered at the close of the add/drop period. If you are concerned about your ability to succeed in this course, it is important to make an appointment to speak with me as soon as possible. The University policy on withdrawal allows students only a limited number of opportunities available to withdraw from courses. It is important for you to understand the financial and academic consequences that may result from [course withdrawal](http://provost.uncc.edu/policies/withdrawals).

**University reporting expectations**

UNC Charlotte is committed to maintaining an environment conducive to learning for all students and a professional workplace for all employees. The University takes active measures to create or restore a respectful, safe, and inclusive environment for community members that is free from discrimination, discriminatory harassment, and interpersonal violence. If you (or someone you know) has experienced any of these incidents, know that you are not alone. UNC Charlotte has staff members trained to support you in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, helping with civil protective orders, and more.

Please be aware that all UNC Charlotte employees, including faculty members, are expected to relay any information or reports of discrimination, discriminatory harassment, or sexual and interpersonal misconduct they receive to the [Office of Civil Rights and Title IX](http://civilrights.charlotte.edu/). This means that if you tell me about a situation involving these matters, I am expected to report the information. Although I am expected to report the situation, you will still have options about how your case will be handled, including whether or not you wish to pursue a formal complaint. Our goal is to make sure you are aware of the range of options available to you and have access to the resources you need.

If you wish to speak to someone confidentially, you can contact the following on-campus resources, who are not required to report the incident to the Office of Civil Rights and Title IX: (1) Center for Counseling and Psychological Services (CAPS) ([caps.charlotte.edu](https://caps.charlotte.edu/), 7-0311); or (2) Student Health Center ([studenthealth.charlotte.edu](http://studenthealth.charlotte.edu/), 7-7400). Additional information about your options is also available at [civilrights.charlotte.edu](file:///C:\Users\alabell3\Dropbox\ALAB\TEACHING\Independent_Studies\civilrights.charlotte.edu) under the “Students” tab.

**Staying healthy and safe**

**Mental health** concerns or stressful events may reduce a student's ability to participate in daily activities or diminish academic performance. Services are available to assist you with addressing these and other concerns you may be experiencing. You can learn more about the broad range of confidential mental health services available on campus via the Counseling & Psychological Services (CAPS) website at [caps.charlotte.edu](file:///C:\Users\alabell3\Dropbox\ALAB\TEACHING\Independent_Studies\caps.charlotte.edu).

UNC Charlotte defines **"basic needs"** as those needs that, when unmet, can hinder students’ ability to focus on and successfully complete their academic studies. Basic needs include food security, housing security, transportation, health and wellbeing, technology, and child care. Any student who experiences difficulty in one or more of these areas is urged to contact the [Student Assistance and Support Services (SASS) Office](https://sass.charlotte.edu/) for support with navigating campus and community resources. Students can also consult the [Niner Needs website](https://ninerneeds.charlotte.edu/) for a list of helpful resources designed to address student needs.

**FERPA**

In establishing [University Policy 402, Student Education Records](https://legal.charlotte.edu/policies/up-402), UNC Charlotte adheres to a policy of compliance with the [Family Educational Rights and Privacy Act of 1974](https://www.law.cornell.edu/uscode/text/20/1232g), also known as FERPA, a federal law that affords students the following rights with respect to their education records. For details, see the [FERPA Annual Notification](https://legal.charlotte.edu/legal-topics/ferpa-family-educational-rights-and-privacy-act/ferpa-annual-notification) posted on the Office of Legal Affairs website. All questions concerning this FERPA Annual Notification may be directed to the attention of the [Office of the Registrar](https://registrar.uncc.edu/).