

Course Information
Algorithms for Molecular Biology
CSCI / MCDB 4314/5314, Fall 2008

Computers are revolutionizing biology, and biology is presenting complex new algorithmic challenges for computer scientists. The enormous volume of error-prone data generated by genomics projects and other new high-throughput experimental methods requires efficient computational techniques. In this course we will cover topics in DNA sequence analysis, RNA and protein structure analysis, comparative genomics, and biological networks. Additionally, students will work in groups to develop new methods to analyze real biological data, and present their work to the class. Students will be expected to do the readings in advance and contribute to class discussions.

Course Time: 4:00-5:15 PM Monday and Wednesday **Place:** MUEN E064
Instructor: Debra Goldberg **Office:** ECST 322b
Email: debra@cs.colorado.edu **Phone:** 303-492-9344
Office Hours: by appointment

Course Webpage: http://www.cs.colorado.edu/~debra/classes/amb_f08

Textbook: Jones and Pevzner, *An Introduction to Bioinformatics Algorithms*, MIT Press.
<http://www.bioalgorithms.info/>

Other readings from the literature will be distributed.

Course requirements and grading (4314 / 5314):

- ~4 homework assignments (20% / 15%)
- lead discussion on assigned readings (0% / 5%)
- group project proposal (15% / 15%)
- group midterm progress report (20% / 15%)
- final group project and class presentation (20% / 20%)
- class participation (15% / 15%)
- group participation (10% / 15%)

Students are urged to work together on assignments, projects, and presentations, but you must inform me of any collaboration or help you receive or give.

Due dates:

If you cannot turn in an assignment on time, you must tell me **before** it is due.

University policies (the fine print):

Disability accommodations:

If you qualify for accommodations because of a disability, please submit to me a letter from Disability Services in a timely manner so that your needs may be addressed. Disability Services determines accommodations based on documented disabilities.

Contact: 303-492-8671, Willard 322, and www.colorado.edu/disabilityservices

Religious observances:

Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly deal with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, let me know **at least** one week before religious obligations that will interfere with required work. See full details at http://www.colorado.edu/policies/fac_relig.html

Classroom behavior:

Students and faculty each have responsibility for maintaining an appropriate learning environment. Students who fail to adhere to such behavioral standards may be subject to discipline. Faculty have the professional responsibility to treat all students with understanding, dignity and respect, to guide classroom discussion and to set reasonable limits on the manner in which they and their students express opinions. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender variance, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. See policies at <http://www.colorado.edu/policies/classbehavior.html> and at http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code

Discrimination and Sexual harassment:

The University of Colorado policy on Sexual Harassment and the University of Colorado policy on Amorous Relationships applies to all students, staff and faculty. Any student, staff or faculty member who believes s/he has been the subject of discrimination or harassment based upon race, color, national origin, sex, age, disability, religion, sexual orientation, or veteran status should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Judicial Affairs at 303-492-5550.

<http://www.colorado.edu/policies/discrimination.html>

Information about the ODH and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at <http://www.colorado.edu/odh>

Honor code:

All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-725-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Other information on the Honor Code can be found at

<http://www.colorado.edu/policies/honor.html> and at <http://www.colorado.edu/academics/honorcode/>