

CS196-1: Algorithmic Foundations of Computational Biology
CIT 368 · Tuesday and Thursday, 9:00-10:20

Course Organization

1 People (cs196-1tas@cs.brown.edu)

Professor

Prof. Sorin Istrail
401-863-6196
sorin@cs.brown.edu

Teaching Assistants

HTA: Ryan Tarpine (ryan@cs.brown.edu)
TA: Eric Lim (kl@cs.brown.edu)
UTA: Haynes Heaton (wheaton@cs.brown.edu)

Office Hours

Sorin – Mon 2:30-3:30pm, Wed 2:00-3:00pm (CIT 523) or by appointment
Ryan – Mon 6:30-7:30pm (CIT 227), Wed 3:30-4:30pm (CIT 455)
Eric – Tue 10:30am-12:00pm (CIT 543), 8:00-10:00pm (CIT 227)
Haynes – Thu 7:00-9:00pm (CIT 227)

Contacting Us To make an appointment with Sorin, contact his assistant Erin Klopfenstein at ehk@cs.brown.edu. To schedule an appointment with one of the TAs, email cs196-1tas@cs.brown.edu.

2 Structure of the Course

Homework Homeworks will be assigned each Tuesday, beginning February 6, and will be due by 11:59pm the following Tuesday. Towards the second half of the course, homeworks will be assigned less frequently but will also be more involved, typically spanning two weeks instead of one. Homeworks must be turned in on time and late submissions may be subject to penalties. Biology and medical students will get special homework to compensate for the programming assignments in the homework.

Midterm and Final The midterm and final will be modeled after the homework assignments. They will both be take-home, open-book and you will have 24 hours to complete them.

Grading

- Homeworks – 50%
- Midterm – 25%
- Final – 25%

3 Course Resources

Web Site

Nearly everything you will need will be made available through the course web site, including TA notes, slides, homework assignments, tests, etc. Please check the web site regularly. The web site is located at: <http://www.cs.brown.edu/courses/cs196-1/>

Books

- **REQUIRED** – N. Jones and P. Pevzner, *An introduction to bioinformatics algorithms*, MIT Press 2004. <http://www.amazon.com/gp/product/0262101068/>
- **REQUIRED** – D. Huff and I. Geis, *How to Lie With Statistics*, W. W. Norton & Company, 1993
- M. Waterman, *Introduction to Computational Biology*, Chapman and Hall, 1995
- R. Durbin, S. Eddy, A. Krogh and G. Mitchinson, *Biological Sequence Analysis*, Cambridge University Press, 1998
- D. Gusfield, *Algorithms on strings, trees and sequences. Computer Science and Computational Biology*, Cambridge University Press, 1997

4 Prerequisites

The course is designed for graduate students and upper-level undergraduates. It is also open to Computer Science and Math students, as well as biological and medical students. Since the class will be comprised of students with a diverse background, homework and tests will involve general questions for all students as well as more in-depth questions, which you will be able to choose from in accordance with your particular background. While there are no formal prerequisites for the courses, you should have a strong background in at least one of these two areas. Please contact the professor if you are unclear as to whether you have the necessary prerequisites for the course.

5 200-level Credit

Graduate students will have the option of obtaining 200-level credit for the course by completing **one** of the two following options:

- For theory-oriented students, a more in-depth survey of a topic that was discussed in class.
- Systems-oriented students will work with the professor to define a programming project.

All graduate-level credit projects must be approved by the professor.

6 Collaboration Policy

You may discuss the homework problems with other students or use other resources such as textbooks or the Internet. However, you must not obtain answers directly from anyone else. All homeworks will be submitted individually. The midterm and final are not to be discussed with other students.