Biol 444 : GENOMICS
Spring 2014

Instructor: Dr. Barrie Robison
LSS 266B
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Office Hours: I won’t be holding regular office hours this semester. Instead, I’m adopting an “open door” policy. If you need help or would like to discuss something pertaining to the course, feel free to drop by my office. If I am there and available, we can discuss whatever you’d like. If I’m working on another project or otherwise occupied (or not there), email me or call (or text) my cell phone to make an appointment. My cell phone number is 509 432 3782. Please don’t call or text after 9pm.

Course Summary: The field of Genomics is expanding rapidly, and is currently a driving force behind many recent advances in the biological sciences. This course will examine Genomics in the context of fundamental questions in biology. We will focus on genomic techniques in sufficient detail to allow students to critically evaluate the scientific literature, analyze scientific results portrayed in the popular media, and discuss the many societal issues associated with genome science. This is NOT a “techniques” course.

Learning Outcomes: 1) The student will be able to read, understand, and synthesize the primary literature pertaining to the field of genomics.

2) The student will have knowledge of, and be able to discuss, the ethical issues surrounding the field of genomics.

3) The student will be able to demonstrate a deep and sophisticated understanding of a specific area, application, or consequence of genomics. The specific area will be selected by the student and approved by the instructor. The student’s understanding will be demonstrated through the completion of the term project.

Lectures: Lectures in this course are intended to provide the necessary background to read, interpret, and critically evaluate primary literature and the guest lectures. The structure of the lectures will be of three main types. Tools lectures will focus on genome technology, an understanding of which is critical to a student’s understanding of the field. Background lectures are intended to introduce a biological problem that motivates the research of a guest speaker. Concepts lectures are designed to illustrate how genome science is being used to make advances in other fields, including medicine, basic biological science, and agriculture. Lectures will comprise roughly one third of the scheduled course time. Please note that the course schedule is dynamic, and the schedule of lecture topics is subject to change. Assignment due
dates and exam dates will not be changed except under unusual circumstances (University closure, illness or injury, etc.).

Readings:  

I will not be requiring a textbook for this course. The field of genomics moves too rapidly for textbooks to be of much use. Nevertheless I will periodically assign readings for in class discussion or to supplement the lectures. These readings will be selected from the primary literature, review articles, and articles from the popular press.

Self directed reading. The scope of Genomics as a field is such that I cannot exhaustively cover every conceivable topic of interest to each student. The assignments in this course are therefore designed to give the student flexibility in what is covered. This requires a lot of self directed reading. I will suggest some websites and other materials as a starting point, and each student will read the material in which they are most interested. Periodic discussions during class time are intended as venues for students to share what they have learned with their peers.

Readings that are assigned to supplement discussions, my lectures, or guest lectures are considered examinable material. I will explicitly identify these readings in advance of the exams.

Seminars:  

I will be structuring much of the course around the most recent developments and discoveries that have been enabled by genome science. The class time (Tuesdays and Thursdays at 1230) coincides with the seminar series held by the Department of Biological Sciences (Tuesdays) and the Initiative for Bioinformatics and Evolutionary Studies (Thursdays). We will be attending a few of these seminars (as many as six) this semester. In some cases, only half the class will attend because the seminar room is not large enough. Attendance at seminars is required and will be recorded as part of your “In Class Assignment” grade (see below).

Assignments:  

Exams: There are two exams (a mid-term and a final) in this course, both of which will be essay format, and both of which will be take home. You are not permitted to work together on exams.

Term Project: A large fraction of your grade is associated with a large and synthetic term project. The guidelines for this project will be distributed in a separate document. This project is meant to facilitate student directed learning within the broad topic area of “Genomics”.

In Class Assignments: You will be given assignments in class that will be completed during class time and turned in at the end of class or, at the instructor’s discretion, the beginning of the next class period. The format of these assignments will vary from week to week, and may include discussions, verbal or written quizzes, writing assignments, journals, or other formats. These assignments will be brief, but frequent (i.e. they are more likely to occur in a given class than not). If you are absent on the day of an in class assignment, you will receive a grade of 0. Make up
assignments are allowed in the case of University travel (e.g. varsity athletes), career related interviews (e.g. medical school), or documented illness.

Grading:

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<td>In Class Assignments</td>
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Academic Honesty: All students are expected to uphold the highest standards of academic honesty. This includes but is not limited to: not cheating, not giving or taking help during exams, not using the ideas of others without giving appropriate credit (including Wikipedia!), and not giving false excuses for missed classes or exams. You may get help from other students (and are encouraged to do so!) on assignments but you may not simply copy from someone else. To facilitate enforcement of University policies, I will ask that electronic versions of major writing assignments be submitted along with printed versions. Any incident of academic dishonesty will be handled according to the guidelines of the University of Idaho, and will be referred to the Dean of Students office. The instructor reserves the right to document and/or seize any evidence (notes, notebooks, electronic devices) of alleged academic dishonesty, which will be submitted to the Dean of Students office.