

BIOL 444: Genomics
Spring, 2020
TR 11:00-12:15, Eng/Phys 214

Instructor: Dr. Adam G. Jones
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Office Hours: Mondays, 3:30-4:30 p.m. or by appointment. Email is the preferred method of contact.

Course Summary:

This course provides an introduction to the field of genomics. The course emphasizes the technological advances and biological insights associated with the field. We also explore the ethical implications of these rapid advances in biotechnology. No textbook is required.

Learning Outcomes:

At the end of the course, students will understand the origin of genome sequencing and its implications for the field of biology. In particular, students will be expected to understand new genome sequencing technologies, the importance of bioinformatics to genomics, a subset of bioinformatics techniques, and how to obtain data from public databases. They will also be expected to appreciate the importance of genomics with respect to a broad swath of biological disciplines, including the health sciences, ecology, evolution, development, and molecular biology.

Grading:

Grades will be based on 10 graded in-class assignments and 3 exams (two midterms and a final). Each exam will be worth 100 points. In-class assignments will be worth 10 points each. The total number of points available is 400. Letter grades will be determined by the total number of points earned by a student, as follows: 0-239 = **F**, 240-279 = **D**, 280-319 = **C**, 320-359 = **B**, 360-400 = **A**.

Attendance:

Students must attend class to earn a passing grade in this course. Most of the exam materials will be based on content covered in class (as the course has no required textbook). In addition, many class periods will have an assignment. Unexcused absences will result in a 0 on the assignment for the day. Students will be permitted to make up missed work, provided they can document the absence as an official university-excused absence. The intent to make up a missed assignment must be communicated to the instructor within three days of the absence for the student to be eligible for a makeup assignment.

Center for disability access and resources reasonable accommodations statement:

- Reasonable accommodations are available for students who have documented temporary or permanent disabilities. All accommodations must be approved through the Center for Disability Access and Resources located in the Bruce M. Pitman Center, Suite 127 in order to notify your instructor(s) as soon as possible regarding accommodation(s) needed for the course.
- Phone: 208-885-6307; Email: cdar@uidaho.edu; Website: www.uidaho.edu/current-students/cdar

Course Dates:

January 16:	Introduction to Genomics
January 21, 23:	Using Linux
January 28, 30:	Genes and Disease
February 4, 6:	Simple Bioinformatics Tools
February 11, 13:	Chimps and Neanderthals
February 18, 20:	Whole-genome assembly I
February 25, 27:	Whole-genome assembly II
March 3:	EXAM 1
March 5:	Phylogenomics
March 10, 12:	Comparative Genomics
March 16-20:	Spring Break
March 24, 26:	Gene Drive
March 31, April 2:	Microbiomes
April 7, 9:	Transcriptomics
April 14:	RNA-seq
April 16:	EXAM 2
April 21, 23:	RNA-seq and Gene Ontology
April 28, 30:	Genomics and Disease
May 5, 7:	Genomics and Us

Final Exam: Friday, May 15, 10:15-12:15