

BIOD25 Genomics 2019 Syllabus

Instructor: Dan Riggs

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Office Hours: Monday 11AM-noon; Thursday 1-2PM (just after BIOB11, so I may be late)

Class: Wednesdays 2-4PM, in AA205

Textbook: There is no formal textbook for the course; I will occasionally refer to figures from the book by Gibson and Muse "A Primer of Genome Science" which is on 3hr reserve at library. I will post some primary literature articles on Quercus for you to read.

Exams/Assignments

Midterm Exam: in class on Wed. Feb 13th on lectures 1-5: 25%

Bioinformatics assignment: Distributed on or about Feb 1st, Due Feb 20th: 5%

Techniques summary papers: 2 x 5% (due dates are by lottery): 10%

Research Project: Draft due March 8th: 25% (see the Quercus files that describe the research project and the dates below: there are some other deadlines/details that impact scoring).

Final Exam: date TBA by registrar: 35%

| Date | Lecture # | Topics |
|-----------------------|-----------|--|
| Jan 9 | 1 | Intro/genome projects/review of molecular biology methods |
| Jan 16 | 2 | Review of molecular biology methods/sequencing techniques |
| Fri, Jan 18 | | Research project topic selection due |
| Jan 23 | 3 | DNA sequencing technologies; sequence databases. |
| Jan 30 | 4 | Bioinformatics/databases/search algorithms; Bioinformatics assignment distributed via email. |
| Feb 6 | 5 | Sequence variation/SNPs/LD/association mapping/genome wide association studies (GWAS) |
| Feb 13 | | Midterm Exam (in class on lectures 1-5) |
| Feb 20 | NO CLASS | READING WEEK Bioinformatics assignment due |
| Friday, Feb 22 | | Due date for becoming acquainted with peerScholar videos |
| Feb 27 | 6 | Transcriptome/microarrays/Q-PCR |
| Mar 6 | 7 | Applications of arrays-compendium approach/ Chromatin and genomic technologies (ChIP, ChiP on Chip, epigenetics, ChIP seq) |
| Fri, March 8 | | Research project to be uploaded to peerScholar |
| Mar 13 | 8 | Transcriptomics/alternative splicing/RNA seq/ Functional genomics |
| Sat, March 16 | | Due date for submitting two reviews to peerScholar |
| Mar 20 | | Research project presentations |
| Mar 27 | | Research project presentations |
| Apr 3 | | Research project presentations |
| Apr 7 | | Reflections of research project due |