

GENE 8940 Genome Analysis

Instructor:

Jessica Kissinger

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C210 Life Sciences (AM) and 422 Biological Sciences (PM)

542-6562

Office Hours by Appointment

Course Logistics:

The course will meet on in C128 Life Sciences

Tuesdays 9:30-11:20 AM with a short break in the middle

All course material, except the recommended text book, is available via WebCT.

If you are auditing the course, please provide me with your MyID and email address so that access can be granted.

Schedule (subject to minor changes):

15 weeks of classes

1. Aug 24 – Introductions – Of genes and genomes (DOE)
2. Aug 31 – Assembly Part –1 (Haemophilus)
3. Sept 7 – Assembly Part –2 (Drosophila)
4. Sept 14 (**MOVE Sept 17th, Friday?**) – Assembly Part –3 (Human Genome)
5. Sept 21 (**MOVE Sept 24? Friday?**) – Similarity searches (BLAST)
6. Sept 28 – Genome features & Gene prediction
7. Oct 5 - Annotation and protein motifs (CDD & PFAM)
8. Oct 12 – GO
9. Oct 19 –SAGE/EST
10. Oct 26 Microarray Part - 1
11. Nov 2 Microarray Part - 2
12. Nov 9 (Guest lecture Russell Malmberg) – RNA analysis
13. Nov 16 - Proteomics
14. Nov 23 - Pathway analysis
15. Nov 30 – SNP analysis & comparative genomics

Assignments:

Assignments are due at the beginning of each class period and **MUST be typed** and have your name written on the **BACK** of the page (e.g. not the side with the questions).

There is a “standing” assignment. Please turn in two questions concerning the reading material for that day.

Also, preparation is mandatory. If called upon, course participants should be able to give a general explanation of any figure or table presented in the assigned reading material.

As genome papers are too large to assign to any one student, groups of students will be assigned to papers and each student will present a section of the paper at the beginning of class. The remainder of class will be used for questions and discussion of the materials and techniques involved. Each student will make two presentations.

Due to the intensive nature of this course, there will be no final exam or final project.

Grades: Will be based upon class participation, presentations, preparation and questions submitted.

Useful Reference Books for Methodologies:

A Primer of Genome Science, Greg Gibson and Spencer Muse, Sinauer Associates, First Edition. 2001, 0878932348

Bioinformatics, David Mount, Cold Spring Harbor Press, First Edition. 2001 First 2001, 0879696087

Bioinformatics: A practical guide to the analysis of Genes and Proteins, Baxevanis and Oulette, Wiley-Interscience; Second Edition, 2001, 0471383910

University Honor Code and Academic Honesty Policy:

We encourage students to work collaboratively and cooperatively in small groups. Students will be expected to take tests as individuals without help from other persons. Students will be expected to abide by the UGA honor code in all aspects of this course. Any infringements of the honor code that come to our attention will be remanded to Academic Affairs for disciplinary action.

Disclaimer:

The course syllabus is a general plan for the course; deviations announced to the class by the instructors may be necessary.