# Syllabus-Part I
## Biology 255
## Eukaryotic Genetics and Chromosome Structure
## Fall 2008

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**Class Meets:** 1:00-2:15 MW LS 100

Overview: The class is focused on the genetics and chromosome structure of eukaryotic model organisms. The focus is on genetic approaches to the analysis of biological problems. In particular, the course will focus in RNA interference, chromatin structure, telomere structure, DNA methylation, transposable elements, and epigenetic gene silencing.

**Learning Objectives:**

Students completing this class should be able to

Understand and appreciate the advantages of various model organisms as genetic tools.

Read and evaluate the primary literature describing genetic approaches to biological questions.

Design a genetic screen and/or genetic experiments to address biological questions.

**Grading:** Three exams, 25% each
Class participation, 25%

**Reference Text:** Hartwell et al. Genetics: From Genes to Genomes
Available in the departmental library, LS 107.
Use in the library or sign out for 1 hour.

**Class Readings:** As assigned from the literature.

Reading Assignments: No asterisk, reference only; *will be presented in class; **Students prepare to discuss in detail.

Chapters on each model organism are in the back of Hartwell. You may also want to use this for background reading on various genetic topics.

| **Part I: Schlappi** | **Lecture Topic** | **Reading List** |
|---|---|---|
| Aug. 25 Mon | Overview and introduction | |
| Aug. 27 Wed | DNA methylation#1 | 1 |
| Sept. 1 Mon | **Labor Day, no class** | |
| Sept. 3 Wed. | DNA methylation#2 | 2 |
| Sept. 8 Mon. | Transposable elements#1 | 3 |
| Sept. 10 Wed. | Transposable elements#2 | 4 |
| Sept. 15 Mon | Epigenetics in model organisms#1 | 5 |
| Sept. 17 Wed. | Epigenetics in model organisms#2 | 6 |
| Sept. 22 Mon. | Epigenetics in model organisms#3 | 7 |
| **Part II: Karrer** | | |
| Sept. 24 Wed. | Intro to model organisms<br>Intro to RNA interference<br>C. elegans biology | |

**Sept. 29 Mon. Exam: Part I (All material through Mon. Sept. 22**