



Spring-2014/15 GENETICS SYLLABUS

General Course Information

Instructors: Assoc. Prof. Dr. Muhammet Şakiroğlu

Course Schedule: Tuesday 9:00 am-12:00pm

Course Credit: 3 cr.

Office Hours: Monday 9:00am-10:00am

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Textbook: Griffiths, Anthony J. F., Jeffrey H. Miller, David T. Suzuki, Richard C. Lewontin, and William M. Gelbart. *An Introduction to Genetic Analysis*. 7th ed. New York: W. H. Freeman, 2000.

We will also use lecture notes as a courtesy of MIT open lectures. The material is translated into Turkish. (<http://ocw.mit.edu/courses/biology/7-03-genetics-fall-2004/lecture-notes/>)

Evaluation and Grading

Kafkas University System will be used for ultimate grading. The course will include **one midterm** exam and **one final** exam. In addition to in class exams, there will be a total of 7 Homeworks. First three homeworks will be incorporated into the midterm exam and will correspond to 30% of midterm score. The other 4 HWs will be part of final exam and would be applied toward 40% of final exam. Group study and collaborations are allowed and encouraged for HWs, ***but it is required that the HWs be handwritten and turned in by individuals***. Homeworks will be graded on a 10 point scale. Late homeworks will be accepted; however, a deduction of 2pt will be applied for each day of delay.

Attendance

Attendance is mandatory for the course. The maximum allowed absence will be calculated based on the College legal standards.

Subject Overview

1. Introduction to Genetics
2. Sexual Reproduction Mechanism and Meiosis
3. Mendel and His Significance in Genetics
4. Mendel's Laws
5. Deviations From Mendel
 - a. Incomplete Dominance
 - b. Codominance
 - c. Multiple alleles
 - d. Lethal alleles
- e. Epistasis
- f. Penetrance
- g. Linkage
6. Mutations
7. Molecular Bases of Genetics
8. Gene to Protein
9. Population Genetics
10. Complex traits
11. Linkage