BIOL 3401-04 – *Cell Biology and Genetics* Lab

Times: Tues, Thurs, 3 - 5:30 pm.

Location: ASCB 263

Instructor: Michael Chen, Ph.D.

Office: BIOS 235; Office Hrs: Tues, Thurs, 12:30 – 2:30 pm; Wed, 9:30 – 10:30 am;

Or by appointment.

[mchen@calstatela.edu](mailto:mchen@calstatela.edu)

Course Description:

An advanced undergraduate course designed to provide a firm foundation in Cellular

Biology and Genetics and the application of this knowledge to a modern understanding of the eukaryotic cell. Topics to be covered include: membranes and membrane transport; cell metabolism; respiration; photosynthesis; heredity; transmission genetics; and techniques in cell biology and genetics.

Laboratory activities involve hands-on experience with techniques and

instrumentation used in Cell Biology and Genetics research and builds upon the class

lecture material.

Student Learning Objectives:

This course informs students about the structural organization, function and

regulation of major components of the eukaryotic cell as well as the processes of cell

genetics and heredity. The lab will emphasize techniques in spectrometry, cell

fractionation, centrifugation, photosynthesis, Drosophila growth and reproduction and

genetic studies. An important component of the lab will be to write lab reports in a

concise, clearly written and well-organized format.

Outcomes: Upon completing this course, students will:

1. Become proficient in the theory, and use, of a number of Cell Biology/Genetic

instruments and techniques.

2. Become proficient in handling and rearing laboratory fruit flies and tracing

their genetic traits and histories.

3. Become proficient in taking laboratory notes and in writing a clear and concise

scientific lab report.

**Lab Manual**: Provided on-line in the lab Canvas site. Best to read and print lab

pages before coming to lab.

**Attendance**: Students are responsible for all material presented in lab, including announcements about any changes in the course.

**Course grades will be assigned as follows**:

A: 93 – 100 % B-: 80 – 81 % F: Below 60 %

A-: 90 – 92 % C+: 77 – 79 %

B+: 87 – 89 % C: 70 – 75 %

B: 82 – 86 % D: 60 – 69 %

**Note: There will be absolutely no make up labs and no extra credit will be**

**considered.**

Course Canvas Webpage. The Lab Manual, any quizzes and any Announcements for lab will be posted here. Please check the lab (and lecture, if enrolled) Canvas sites regularly for important information.

Course Policies

• Drop Policy—The drop policy established by the university will be strictly followed. After the no record drop deadline, students may drop a course only for “serious and compelling reasons”. Failing a course is not an acceptable reason for withdrawal. Acceptable documentation is required verifying the reason for the withdrawal. See the Schedule of Classes for information.

• Credit by Exam—Credit by Exam is not offered for this course.

**Tentative List of Laboratory Activities**:

See Lab Manual for list of lab exercises. Note that changes may occur so stay in

touch with the lab and the Canvas site.

Lab Grading based on the following components:

Lab Report write-ups: 4 x 25 = 100

Lab Attendance/Participation 25

Quizzes 5 x 5 = 25

Notebooks 20

Final Lab Exam 60

Total 230 pts