

BIOL-6B: Cell & Molecular Biology

BIOLOGY-006B: Lecture	Asynchronous, twice/week	via Canvas
BIOLOGY-006B-09Y: Lab CRN: 38253	Mon/Wed 10:30-12:20	SC-2118
BIOLOGY-006B-04Y: Lab CRN: 00222	Mon/Wed 1:30-4:20	SC-2118
<p>Course Syllabus, schedule, lecture slides, and lab supplements available from the course website: http://www.deanza.edu/faculty/heyerbruce/bio6bsyllabus.html</p>		
<ul style="list-style-type: none"> ◆ Required Text: <i>Campbell Biology</i>, 12th ed., Urry, L.A., <i>et al</i>; Pearson Education, 2021. ◆ Required tutorial-homework-quiz website: <i>Mastering Biology</i> <ul style="list-style-type: none"> ▪ Purchase access code with text, or from Pearson Education through the class <i>Canvas</i> ◆ Required Lab Manual: <i>Biology 6B Laboratory Manual, 2020</i>, Heyer, B., DeAnza College <ul style="list-style-type: none"> ▪ download from the class website (see above). ◆ Required lab tutorials & simulations: <i>LabXchange</i>, Harvard University <ul style="list-style-type: none"> ▪ Register (free) at: https://www.labxchange.org/sign-up. ◆ Additional required lab tutorials & simulations from <i>Jove</i> and the <i>DNA Learning Center</i> will be accessed via the class <i>Canvas</i> modules. <ul style="list-style-type: none"> ▪ These tutorials & simulations are browser-based, so they do not need to be downloaded. 		
Instructor: Bruce Heyer	Email: heyerbruce @ deanza.edu	
	Office Hours via Zoom: Tue/Thu 9:40-11:30	

This course is designed to introduce you, the student, to the study and understanding of the structure, genetics, biochemistry, and physiology of cells. The cell is the basic fundamental unit of life. All the processes of life, including harnessing energy, reproduction, inheritance of characteristics, and responding to the environment, can only be fully appreciated with an understanding of their cellular bases. Biol-6B will emphasize processes and structures common to most cells, and prepare you for more extensive, specialized upper-division work. The development of the field of cell biology and the focus of current innovative research in molecular biology will also be discussed. You will become more independent by learning to read, interpret, and evaluate original scientific papers.

The laboratory portion of the course provides experience utilizing the modern instruments and methods of molecular biology and analyses of real data. These elegant techniques provide practical experience for those pursuing careers in biological research.

Student Learning Outcome Statement

- Demonstrate the ability to use appropriate molecular biology techniques to answer research questions and to interpret and explain the results.

GRADING

- ◆ **Online Homework:** Cumulative score of all *Mastering Biology* exercises counts % of 100 points.
- ◆ **Lab Exercises, Quizzes, Reports, and Lab Exam:** Cumulative score counts % of 200 points.
- ◆ **Lecture Exams:** Three exams. Each exam counts % of 100 points. (3 x 100 = 300 points)

The final class grade will be determined as a percentage of the maximum total 600 points:

| 92-100%= A | 89-91%= A- | 86-88%= B+ | 80-85%= B | 77-79%= B- |
 | 74-76%= C+ | 65-73%= C | 53-64%= D | <53%= F

BIOL 6B: Cell & Molecular Biology
2024 Winter Quarter — sections 4Y & 9Y — Class Schedule

Week	Date	Day	Lab Topic (synchronous online)	Lecture Topic (asynchronous online)	Chapter
1	Jan 08	Mon	Solutions & Dilutions	Intro / Chemistry Review	2–3
	Jan 10	Wed	Protein Electrophoresis, pt.1	Organic / Biological Chemistry	4–5
2	Jan 15	Mon	<i>holiday</i>	Enzymes & Metabolism	8
	Jan 17	Wed	Protein Electrophoresis, pt.2 Cutting DNA, pt.1	Molecular Inheritance	16
3	Jan 22	Mon	Cutting DNA, pt.2	Gene Expression	17
	Jan 24	Wed	Conjugation, pt.1	Viral & Bacterial Genetics	19, 27.2
4	Jan 29	Mon	Conjugation, pt.2	Extension: COVID-19 & Vaccine Development	
	Jan 31	Wed	Exam 1	Prokaryotic Gene Regulation	18
5	Feb 05	Mon	Conjugation, pt.3 pGLO Transformation, pt.1	Eukaryotic Gene Regulation	“
	Feb 07	Wed	pGLO Transformation, pt.2	Biotechnology	20
6	Feb 12	Mon	pGLO Transformation, pt.3	Into the Cell	6
	Feb 14	Wed	pGLO Transformation, pt.4	Cell Membranes	7
7	Feb 19	Mon	<i>holiday</i>	Cell Communication	11
	Feb 21	Wed	pGLO Transformation, pt.5	Extension: Cells & Signals	
8	Feb 26	Mon	PCR, pt.1	Cell Cycle	12
	Feb 28	Wed	Exam 2	Cancer Biology	18.5
9	Mar 04	Mon	PCR, pt.2	Meiosis / Sexual Reproduction	13
	Mar 06	Wed	PCR, pt.3	Genes & Chromosomes	14-15
10	Mar 11	Mon	PCR, pt.4	Bioenergetics	8
	Mar 13	Wed	Review & Lab Exam preparation	Cellular Respiration	9
11	Mar 18	Mon	Lab Exam	Photosynthesis	10
	Mar 20	Wed	Extended Methods	Catch-up & Wrap-up	
12	Mar 25	Mon	Exam 3 — sec 04Y 1:45–3:45		
	Mar 27	Wed	Exam 3 — sec 09Y 9:15–11:15		