

**PRINCIPLES OF BIOLOGY I, BIOL 1100**  
**California State University, Los Angeles**  
**Department of Biological Sciences**  
**Spring 2020**



**Instructor:** Mario L. Mata, Ph.D.

**Office Location:** *to be determined*

**Email:** mmata23@calstatela.edu

**Office Hours:** Tuesday 9:30 – 10:30 am

Lecture Location: ASCB 132

Lecture Time: TueThu 8:00 – 9:15 am

**Prerequisites:** Calculus ready.

**Course Description:** Biology 1100 is the first course in the introductory biology major's series. The course covers the structure and function of cells including biological molecules, biological membranes, organelles, prokaryotes, eukaryotes, viruses, cellular respiration, photosynthesis, and an overview of Mendelian and molecular genetics.

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**Course Objectives:**

Upon successful completion of this course, students will be able to:

- 1) Describe the structural components of biological molecules that govern their individual functions.
- 2) Describe the major features of prokaryotic and eukaryotic cells that make them the smallest units of life.
- 3) Describe energy flow at the cellular level.
- 4) Describe how the individual components of the central dogma of molecular biology collaborate to both pass on genetic information and produce functional cells.

**Required Course Materials:**

**Textbook:** McGraw Hill Connect Access Card with Raven Biology eBook, 12<sup>th</sup> Ed. ISBN: 9781260887921

You are expected to read the assigned chapters or chapter sections **before** each class. See the course Canvas website for information on purchasing the access card & registering for Connect.

**Online Biology Support:** McGraw Hill Connect. This online content supports student understanding of lecture and textbook material, and is required for graded student homework and reading quizzes. Link to support is on Canvas.

**Computer Requirements:** You will need to have an up-to-date browser, operating system and some additional software on your computer to take this class. Check the [ITS Helpdesk Student Resources page](#) for instructions. Some of the documents in this course will be available to you in PDF form. You will need download and install [Adobe Acrobat Reader software](#) on your computer.

**Attendance and Studying:** Students are responsible for all material presented in class, including announcements about changes in course procedures. Students who do not attend class generally do not pass this course. A fair calculation for the time required for this class should take into account the need to spend at least 2 hours of independent study for each class hour.

**Lab Manual**— Biology 1100 Lab Manual. Lanning et al. (2019). This lab manual will be provided to you free of charge on Canvas.

### Evaluation:

#### Grading

Midterm Exam 1	150 points
Midterm Exam 2	150 points
Midterm Exam 3	150 points
Final Exam	250 points
<u>Lab &amp; Recitation</u>	<u>300 points</u>
	1,000 points Total

#### Grading Scale

Grades in this course are not curved. Course grades will be assigned as follows:

A:	100-93%	C:	76.9-73%
A-:	92.9-90%	C-:	72.9-70%
B+:	89.9-87%	D+:	69.9-67%
B:	86.9-83%	D:	66.9-60%
B-:	82.9-80%	F:	59.9-0%
C+:	79.9-77%		

Note: There will be no possibilities for making up missed assignments or obtaining extra credit.

#### Format of Graded Lecture Content

- Lecture exams** are objective format (multiple choice, matching, true/false, short answer). A **scantron**, form 882-E, is required for each midterm and the final exam. **No make-up tests will be scheduled. With an excused (i.e. discussed in advance or doctor's note) absence** for a test, the value of the final exam will be increased to compensate for the missed test. If evidence of emergency can be provided for a missed final, an Incomplete will be given. **All cell phones and other electronic devices are to be turned off during the exams.**

**Course Canvas Webpage** – PowerPoint lectures, course syllabus, major grades, and announcements are on the course Canvas page. Please check our Canvas course regularly for important information. You can access the course Canvas page through MyCalStateLA.

#### Course Policies

- Drop Policy**—The drop policy established by the university will be strictly followed. 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 available for this course. Please speak with the instructor on the first day of class for more information. It is only recommended if you earned 85% or better score in lab previously.
- Incomplete Grade Policy**—Incomplete grades can only be assigned when the majority of the coursework has been completed (essentially all work except the final exam), and the student is passing the course (grade of C or better). The submission of an Incomplete Grade Form is required.

- **ADA Compliance:** Reasonable accommodation will be provided to any student who is registered with the Office of Students with Disabilities and requests needed accommodation.
- **ACADEMIC HONESTY:** Students are expected to read and abide by the University's Academic Honesty Policy, which can be found at <http://www.calstatela.edu/academic/senate/handbook/ch5a.htm> as well as in the current Schedule of Classes. Students who violate this policy will be subject to disciplinary action, and may receive a failing grade in the course for a single violation. **All cell phones and other electronic devices are to be turned off during the exams.**
- **Email - All emails pertaining to the course must come from your *CSULA email account*.** E-mail correspondence with the professor and lab instructors must be **professional**. Now is the time to start practicing for the job market, graduate school applications, business correspondence, etc. When you send a sloppy, unpunctuated e-mail (e.g., from your iPhone), you are conveying a message of non-professionalism, laziness, and indifference; this will hurt you dearly in the professional world. Having the discipline to write professional correspondence will benefit you!
- **Please refer to this syllabus for all course procedural questions.** This syllabus is subject to change. If a change is made, the professor will immediately notify the class and post a revised syllabus.

## **Helpful Student Resources**

### **Technical Resources**

Information on Cal State LA technical support resources for students: [Technical Support](#)

### **Student Support Services**

Information on Cal State LA student support resources for students: [Student Services](#)

### **Academic Support Services**

Information on Cal State LA academic support resources for students: [Academic Support](#)

### **Canvas Resources**

Information for students on how use Canvas: <http://www.calstatela.edu/cetl/edtech/canvas>

## **COURSE & UNIVERSITY POLICIES**

### **Student Handbook**

Information on student rights and responsibilities, academic honesty, standards of conduct, etc., can be found in Schedule of Classes for the current quarter visit the Cal State LA [Schedule of Classes Information](#) under Policies and Procedures.

### **Dropping and Adding**

Students are responsible for understanding the policies and procedures about add/drops, academic renewal, etc. Students should be aware of the current deadlines and penalties for adding and dropping classes by visiting the [GET home page](#). (Registrar news and information)

### **Americans with Disabilities Act (ADA)**

Reasonable accommodation will be provided to any student who is registered with the Office of Students with Disabilities and requests needed accommodation. For more information visit the [Office for Students with Disabilities](#) home page. <http://web.calstatela.edu/univ/osd/atlc.php>.

## **General Advice**

- Please come to office hours if you need help. Too many students wait until just before the final to ask how they can improve their grades. You may email me to schedule an appointment outside of office hours if you cannot make it to the posted office hours.
- Some tips for doing well in this class (and all of your other classes): Do the readings in advance. Study every single day! Don't wait until just before the exam to study. Use the few days before the exam to review material, not learn for the first time. Take notes during class (on paper, not on a computer). Avoid distracting yourselves and others during lecture by text messaging or engaging in social media activities. Study with others. Make vocabulary lists or flash cards for terms you need to know or come across in your reading that you don't understand. I welcome participation, questions, and visits to office hours.

### Course Schedule:

Week	Lecture Date	Lecture Topic	Reading Assignment
1	Tues. Jan 21	Introduction; Properties of Life	Ch 1
	Thu. Jan 23	Basic Chemistry; Water; Carbon	Ch 2, 3
2	Tues. Jan 28	Biological Molecules – Carbohydrates & Lipids	Ch 3
	Thu. Jan 30	Biological Molecules - Proteins	Ch 3
3	Tue. Feb 04	Biological Molecules – Nucleic Acid Structure	Ch 3, 14.1-14.2
	Thu. Feb 06	Biological Membranes	Ch 4, 5
4	Tues. Feb 11		
	<b>Thu Feb 13</b>	<b>Midterm # 1</b>	<b>Midterm #1</b>
5	Tues. Feb 18	Cellular Structure & Organization I	Ch 4
	Thu. Feb 20	Energy and Metabolism	Ch 6
6	Tues. Feb 25	Photosynthesis I	Ch 8
	Thu. Feb27	Photosynthesis II	Ch 8
7	Tues. Mar 03	Cellular Respiration I – Glycolysis & TCA Cycle	Ch 7
	Thu. Mar 05	Cellular Respiration II – OXPHOS; Fermentation	Ch 7
8	Tues. Mar 10	Cell Cycle	Ch 10
	Thu. Mar 12	DNA Replication	Ch 14
9	Tue. Mar 17	Mitosis	Ch 10
	<b>Thu Mar 19</b>	<b>Midterm #2</b>	<b>Midterm #2</b>
10	Tue. Mar 24	Meiosis	Ch 11
	Tue. Mar 26	Biotechnology I	Ch 17
11	<b>Mar 30 – Apr 5</b>	<b>Spring Break</b>	<b>Spring Break</b>
12	Tue. Apr 7	Mendelian Genetics	Ch 12
	Thu. Apr 9	Mendelian Genetics	Ch 12
13	Tue. Apr 14	Chromosomal Inheritance	Ch 13
	Thu. Apr 16	<b>Midterm #3</b>	<b>Midterm #3</b>

<b>14</b>	Tue. Apr 21	Central Dogma of Molecular Biology II - Transcription	Ch 15
	Tue. Apr 23	Central Dogma of Molecular Biology I - Translation	Ch 15
<b>15</b>	Tue. Apr 28	Control of Gene Expression	Ch 16
	Thu. Apr 30	Genomics	Ch 18
<b>16</b>	Tue. May 5		
	Thu. May 7	Review	
<b>Final</b>	<b>May 11-May 16</b>	<b>Final Exam (Date to be determined)</b>	<b>Final Exam</b>

**Please see the Lab Syllabus for the lab schedule and details on assignments associated with recitation and lab.**