

Text — *Principles of Biology*, Nature Education e-text. **Required.** The access kit is available ONLY from the CSULA campus bookstore. Do not purchase online because we are in a pilot test and you may not be able to access my course. Note: If you have previously purchased an access code, you do not need to buy a new one! The publisher will enroll students from 100A Winter 2012 into 100B Spring 2012. The course will appear in your “bookshelf” on the nature site. If your access code was used in a course other than 100A Winter 2012, please email Dr. Torres. She will have the publisher add you to 100B Spring 2012. The textbook has been customized for this course, module numbers correspond to the modules in the customized version of the text.

Lab Manual — McQueen et al. 2012. *Introduction to Cell Biology and Genetics*. 2nd Ed. Student Book Mart (1725A N Eastern, LA) or campus bookstore. You will need to place the pages of the lab manual into a three-ringed binder. This is a new edition of the lab manual. Please do not use one from a previous quarter.

Course Description — Biology 100B is the second course in the introductory biology major’s series. The course covers structure/function of cells including biological molecules, membrane structure and function, prokaryotes, eukaryotes, viruses, cell respiration, and photosynthesis, and overview of genetics including Mendelian, molecular, microbial, and population.

Prerequisites — BIOL 100A and MATH 104A with grades of C or better. MATH 105 recommended.

LECTURE TOPICS:

Day = Date	Topic	Module #
T = 04/03	Overview of course; Water & Carbon; The Chemical Basis of Life	4-6
R = 04/05	Protein structure and Function; Nucleic Acids	10-12
T = 04/10	Introduction to Carbohydrates; Lipids, Membranes	8-9
R = 04/12	Inside the Cell	13-15, 17
T = 04/17	Cellular Respiration and Fermentation	24-25, 27
R = 04/19	Photosynthesis	29, 30
T = 04/24	MIDTERM 1 – BRING YOUR SCANTRON	-----
R = 04/26	Cell Division	32
T = 05/01	The Cell Cycle	33
R = 05/03	DNA and the Gene: Synthesis and Repair	43-45
T = 05/08	How Genes Work	46-47
R = 05/10	Transcription and Translation	48-49
T = 05/15	Control of Gene Expression	50-51
R = 05/17	MIDTERM 2 – BRING YOUR SCANTRON	-----
T = 05/22	Analyzing and Engineering Genes	56-57
R = 05/24	Meiosis	35
T = 05/29	Mendel and the Gene – Part 1	36-37
R = 05/31	Mendel and the Gene – Part 2	38-40, 42
T = 06/05	Population Genetics	66
R = 06/07	Genomics	59-60
R = 06/14	FINAL EXAM – 8-10:30am – BRING SCANTRON	

COURSE REQUIREMENTS (1000 PTS.):

<u>Item</u>	<u>Value</u>
2 Midterms (150 pts each)	300 points
1 Final Exam (200 pts) –cumulative	200 points
40 E-text module “test your knowledge” quizzes (at least 50% correct to get credit for quiz). To be completed by 9pm on June 13).	40 points
5 Lecture Activities (5 pts each)	25 points
7 Recitation Problem Sets (25 pts. Each)	175 points
7 Online pre-lab quizzes (10 pts each; lowest score dropped)	60 points
5 Lab Exercise Worksheets (10 pts. Each)	50 points
3 Formal laboratory Reports (50 pts each)	150 points
Total points	= 1000 points

GRADING:

Grades will be determined by the following grading scale and based on final scores achieved in lecture, recitation and lab: A=93% and above (930-1000), A- =90-92.9% (900-929), B+ =86-89.9% (860-899), B=82-85.9% (820-859), B- =80-81.9% (800-819), C+ =76-79.9% (760-799), C=70-75.9% (700-759), C- =66-69.9% (660-699), D+ =64-65.9% (640-659), D=60-63.9% (600-639), D- =58-59.9% (580-599), and F= below 58% (579 and below).

A grade of C or better is required to pass the course, and proceed to Biology 100C.

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. The submission of an Incomplete Grade Form is required.

Drop Policy—Within the W drop period, students may drop a course only for “serious and compelling reasons”. Acceptable documentation is required verifying the reason for the withdrawal, and the signatures of the course instructor and Department Chair are required. Drops during the emergency withdrawal period must meet all conditions required during the W drop period; in addition, ordinarily, complete withdrawal from the University is required. The signatures of the course instructor, Department Chair and the Dean are also necessary.

Exams — Exam format will be objective including multiple-choice, matching, and true/false questions. The exams will include quantitative problems, including genetics problems. The exam questions will be based on material covered in the lectures, recitations, and reading assignments. Each student needs to bring a standard scantron (2-sided, 50 points each side) and pencil/eraser to the exam. Calculators are allowed. There is no clock in the lecture hall, so wear a watch. You will not be allowed to use your cell phone as a calculator or time-keeper. Each student will be randomly assigned to a lecture hall seat for examination periods. You are required to sit in your assigned seat. If there is a problem with your assigned seat, please let Dr. Torres know and she will accommodate any need you might have. Your name must be written at the top of each page of the exam in INK as soon as the exams are distributed. Any student found in the possession of an exam with another student’s name, or an exam lacking a name is subject to disciplinary action (see Academic Honesty policy). No make up exams without documented medical excuse or other valid documented emergency.

Reasonable Accommodation — 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 in Appendix D of the University Catalog.

(<http://ecatalog.calstatela.edu/content.php?catoid=4&navoid=83>). Students who violate this policy will be subject to disciplinary action, and may receive a failing grade in the course for a single violation.

Course Management System — Each student is required to have an AD account for email and access to the course materials and pre-lab quizzes in the Moodle course management system. Moodle can be accessed through your myCSULA portal or at <https://moodle.calstatela.edu> . Please note that campus policy requires that all class email correspondence be conducted through your campus (@calstatela.edu) account. *We cannot respond to emails from non-campus accounts* – if you email any of your instructors in this course from such an account, we will not be able to reply.

E-text Module Reading Assignments — Fourty modules have been assigned for reading. Your etext also includes some relevant modules that are not required reading, but were included in the custom version of the text. Those modules do not have a due date associated with them and will not be considered as part of your grade. The 40 “test your knowledge” quizzes are to be completed during the course, and have a deadline of 9pm on June 13. You must earn a score of at least 50% to get credit for the quiz (1 pt each).

Lecture Activities — Five lecture activities (5 points each) will take place during lecture. These will be active learning exercises (solving problems, or discussing topic) and will be unannounced. If you are not in attendance during the lecture period, you will not be able to receive credit for the activity.

LABORATORY AND RECITATION:

Laboratory Safety — Each student must own a lab coat, which must be worn to participate in the lab sessions. Absolutely no food or drink is allowed in the lab. Students must wear closed-toed shoes. Students wearing sandals will be asked to leave the lab and will not be able to participate. Students are expected to follow laboratory safety instructions provided in the first lab period.

Recitation & Laboratory Sections: The Teaching Assistant for each recitation/lab section is listed below. They will provide each section with their office hours and locations and contact information on the first day of lab.

10875	10	M	11:15am-12:05pm	ASCB 343	Robert Stewart
10876	11	M	12:15pm-2:45pm	ASCB 343	Robert Stewart
10867	02	T	11:15am-12:05pm	ASCB 343	Jeniffer Aleman-Zometa
10868	03	T	12:15pm-2:45pm	ASCB 343	Jeniffer Aleman-Zometa
10869	04	T	3:10pm- 4:00pm	ASCB 343	Cindy Kha
10870	05	T	4:10pm- 6:40pm	ASCB 343	Cindy Kha
10877	12	W	11:15am-12:05pm	ASCB 343	Kevin Chau
10878	13	W	12:15pm-2:45pm	ASCB 343	Kevin Chau
10871	06	R	11:15am-12:05pm	ASCB 343	Jeniffer Aleman-Zometa
10872	07	R	12:15pm-2:45pm	ASCB 343	Jeniffer Aleman-Zometa
10873	08	R	3:10pm- 4:00pm	ASCB 343	Cindy Kha
10874	09	R	4:10pm- 6:40pm	ASCB 343	Cindy Kha

Attendance in Recitation and Lab — Missed labs and recitation sections cannot be made up. Exercise worksheets, homework assignments, or recitation activity assignments will not be accepted for missed classes. Makeup midterms will only be given with documentation of a serious and compelling reason for a missed exam. No pre-final exams or makeup final exams will be given under any circumstances. Five points will be deducted for each day a paper is past the due date for submission.

Preparation for Lab — It is imperative that each student has read the lab exercise and any supporting material before he or she attends lab, and that all students are prompt. The exercises are detailed, precise, and timed to be completed in one period. There is no additional time to wait for students to arrive or to wait for them to acquaint themselves with the exercise. Tardiness may affect a student’s ability to participate in a lab experiment or his / her ability to complete recitation activities with a resultant loss of lab or recitation points. Seven online required pre-lab quizzes are to be completed prior to the laboratory. See lab schedule for which lab dates have quizzes associated with them.

LABORATORY SCHEDULE: * = online pre-lab quiz to be completed prior to lab.

Week	Dates	Lab Manual Exercises
1	April 2, 3, 4, 5	Exercise 2 – Staining Techniques for Prokaryotic Organisms
2*	April 9, 10, 11, 12	Exercise 3 – Subcellular Structures
3*	April 16, 17, 18, 19	Exercise 4 – Introduction to Diffusion and Osmosis
4*	April 23, 24, 25, 26	Exercise 5 – Cellular Respiration and Photosynthesis (Part 5A only)
5*	April 30, May 1, 2, 3	Exercise 6A – Atmospheric Oxygen requirements for growth of bacteria groups Exercise 6B – Streak plate method of obtaining pure cultures
6*	May 7, 8, 9, 10	Exercise 1 – Micropipetting Basics Exercise 7 – Transformation of <i>Escherichia coli</i> with the pGLO Plasmid
7*	May 14, 15, 16, 17	Exercise 8A – Isolation of Nuclear DNA from your own Cheek Cells Exercise 8B – PCR Amplification of a specific location in your DNA
8*	May 21, 22, 23, 24	Exercise 8C – Gel Electrophoresis analysis of your PCR Products & Sequencing
9	May 28, 29, 30, 31	Memorial Day Holiday 5/28 – NO LAB THIS WEEK
10	June 4, 5, 6, 7	Exercise 8D – Use of bioinformatics tools to further analyze information in your DNA

Laboratory Assignments and Due Dates:

You have **three Formal Lab Reports**: Formal Report 1 is for exercise 4. Formal Report 2 is for exercise 5. Formal Report 3 is for exercise 7. You can read the information later in this syllabus on how these formal lab reports will be evaluated. Each of the formal lab reports is worth 50 points. There are **five Exercise Worksheets**: for each of the following exercises (#2, 3, 6A+B, 1, and 8D). Each of the 5 worksheets is worth 10 points. Also please carefully read the information for the **University Policies on Cheating and Plagiarism in the University Catalog – Appendix D Academic Honesty**. (<http://ecatalog.calstatela.edu/content.php?catoid=4&navoid=83>). Even if you are doing a group lab activity, the formal lab reports and informal worksheets that you submit must be written in your own words. Serious consequences will result for any student who chooses to plagiarize his/her lab report. Ignorance of the policy is **NOT** an excuse! MAKE-UPS are NOT possible for labs.

Exercise Worksheets	Lab Manual Pages	Due Date	Lab Reports	Exercises	Due Date
Exercise Worksheet 2	2-6, 2-7	Week 2	Formal Lab Report 1	4	Week 5
Exercise Worksheet 3	3-14, 3-15	Week 3	Formal Lab Report 2	5	Week 7
Exercise Worksheet 6A & 6B	6-7, 6-8, 6-12	Week 6	Formal Lab Report 3	7	Week 10
Exercise Worksheet 1	1-4	Week 6			
Exercise Worksheet 8D	8-28 through 8-36	Week 10			

Format of the lab reports

Your papers must be written using the following format, and must be double-spaced. Consult with your lab instructor for assistance in planning and editing your report. Do not place the report in a binder or folder, just staple the upper left hand corner.

Title Page. The title must be specific and concise. It must tell the reader exactly the scope and content of your report. The title page should also contain the experiment #, title of the experiment, your name, due date, class, quarter, and year.

Purpose. Provide a short summary of the scientific objectives for doing the experiment.

Materials and Methods. This element of a research paper describes all items used and all major procedures followed during each stage of the experiment in enough detail that a person who reads the paper could repeat exactly the experiment discussed. Summarize the methods and refer to your lab manual. You do not need to give every single detailed step in each procedure.

Results. This portion of the report simply states the known facts of the experiment. A brief introductory statement is given to point out significant findings and refer the reader to the table and figure (s) presented here in your paper. Data is not interpreted nor are conclusions given in the results segment of the report. Figures and tables must be numbered and must include a figure legend or table heading. Use the figure and table numbers that are in your lab manual. During lab, you will be filling out tables and hand drawing graphs. For your reports, you should do the tables and graphs in a computer program.

Analysis of results. Show all work for statistical tests performed and for any calculations required in the experiment.

Discussion and interpretation of results. Explanation of the results is undertaken in this section of the report. Include what your results and analysis of results mean, and include answers to specific questions listed with the laboratory experiment.

Literature Cited. All of the references from which information was actually included in the report are listed in this portion of the paper. (Do not cite references which were only consulted but not specifically used in the report.) Consult the journal, *Genetics*, which is available in the university library, for an acceptable method of citing sources in the text and literature cited section.

Scoring for the report. Point values will be applied to the sections of the report as follows: Title page (2), purpose (4), materials and methods (8), results (8), analysis of results (8), discussion (10), literature cited (5), grammar, spelling, organization (5). Total (50 points).