

BIOL 1010: Principles of Biology

Syllabus – Spring 2020

LECTURE: Biology 1010
PLACE: **Dorothy & Bill Bizzini 102** - (Section 002 – Dulai 20150)
TIME: T & R 12:30PM - 1:45PM – (75-minute lectures)

TEXTBOOK: None, but online purchase of Connect Master: Why Biology? is compulsory.

OTHER: **Reef app (a compulsory purchase)** - buy the license from iClicker (<https://www.iclicker.com/students/>) or Bookstore.
We will not be using the Student Remotes this semester.

INSTRUCTOR: Dr. Kamal Dulai **Office:** Naraghi 251
Phone: (209) 607 0304 **Office M:** 12:00 – 2:00pm, in room N251
Hours: (Naraghi Building) Also by appointment.
Email: kdulai@csustan.edu

PREREQUISITES

None. However, a semester of college entry level chemistry is beneficial. Introduction to basic biological phenomena common to all living organisms. Cellular and molecular levels of organization, genetics, and the mechanisms of heredity in organic evolution, environmental associations, structure as it relates to function, and reproduction from the molecular to gross structural levels. Satisfies G.E. area B2. (Lecture, 3 hours)

POLICIES & PROCEDURES

Please carefully familiarize yourself with the policies below. It shall be assumed that you have read and understood them.

SCORES & GRADES

Course Scoring:

Assignment	Point Allocation	Total Points	% of Total Points
Connect Why Biology? Reading Assignments	300 points total	300	30%
Connect Why Biology? Homework	200 points total	200	20%
Exams (Midterms)	75 points each x 4	300	30%
Final Exam	200 points x 1	200	20%
Total		1000	100%
Clicker Based Attendance Bonus Points (read below)		30	3%

Letter Grades: The final distribution of grades in BIOL 1010 is given below. No Exceptions!

Course Point Score	Letter Grade	Course Point Score	Letter Grade
88.00% to 100.00%	A	68.00% to 70.99%	C
85.00% to 87.99%	A-	65.00% to 67.99%	C-
81.00% to 84.99%	B+	61.00% to 64.99%	D+
78.00% to 80.99%	B	58.00% to 60.99%	D
75.00% to 77.99%	B-	55.00% to 57.99%	D-
71.00% to 74.99%	C+	0.00% to 54.99%	F

Information on grade appeals, incompletes, etc. can be found in the *CSUStan Grading Policy* available from the Registrar.

Do NOT plan WEDDINGS/BIRTHDAYS/VACATIONS or other personal events during the semester, as you will not be permitted alternative assessment periods.
NO MIGRATION BETWEEN COURSE SECTIONS IS PERMITTED. POINTS ARE NOT TRANSFERABLE.

Mid-term Exams:

Four 60-minute mid-exams will be given during the indicated lecture periods. These shall consist of 50 multiple choice answer questions. Please bring with you a green Scantron (Form 882-E) with your name and student number correctly bubbled in, a pencil, and your student ID.

You are expected to be familiar with the material covered on all previous assessments and maybe tested on it. Study guides are **NOT** offered – as all content is important!

Final Exam:

A two hour (120 minute) **cumulative** final exam will be given during finals week. The final shall consist of 100 multiple choice answer questions. **NOTE:** You may be asked specific questions on material covered by **any** component of the course; past exams, off-topic discussions, and lectures.

BEWARE: Note the time for the final and place may be different from the regular lecture times.

Lecture Attendance

Students should attend all lectures. Attendance shall be taken automatically at the **start** of each lecture, using Reed app, and bonus points (**1 per lecture x 30 lectures = 30 points**) shall be awarded for attendance for a maximum of **30 bonus points**. It is YOUR responsibility to have access to your Reef account . If you forget please do not ask for compensation, as it will be denied. It is your responsibility to take corrective measures!

Reef App Usage Policy

Students are reminded that you may **ONLY** use your Reef app when physically present in class. If you violate this policy you **will** automatically lose 100% of any attendance points you may have earned. If the situation warrants we may also report you for further action. If you ask or permit others to deploy your clicker in class (even if you are present), you will lose **all** your attendance points and you **will** also be reported to the Office of Student Life for further disciplinary action.

Publisher Supplemental Web Site

Each student **MUST** register for the **McGraw Hill Connect on-line module** for this course but **ONLY through** the course Blackboard site. A free trial period is offered to all students, but you must remember to purchase the access by the expiration date.

Team-based Learning:

At the beginning of the term, students shall be surveyed. Based on the analysis of this data, each student shall be placed in a team, who shall sit together, discuss and work solutions, and provide consensus graded answers to select questions for the remainder of the semester. Each team shall comprise six members. It is imperative that you learn to cooperate in a positive manner with other team members. Learn to identify strengths in others and yourselves and use these to your advantage.

Bonus Points

During the semester occasions **may** arise where the teaching staff may offer the entire class an opportunity to makeup missed points on select portions of exams by completing homework assignments. These points shall be added to your examination grade scores as appropriate.

Independent Study Groups

Although not mandatory, students are **strongly** encouraged to form large (6-15) member study groups, which should meet outside official course hours and tackle course material. Based on data from previous years, these study groups have provided an 18-point advantage on average. *(It should be mentioned here that for most of you this is your first year at a university, and high school study habits may not suffice).* You are encouraged to meet with the lecturer early in the course and discuss your learning methodology.

Make-up exams will not be offered for any midterm assessments.

No make-up mid-term exams are offered under any circumstances. Students who miss a midterm will receive a zero for the entire exercise unless they provide documentation, within 7 days of their return, for **one of the following** acceptable excuses:

1. Incapacitating illness or accident -- requires a note from student's physician (not a family member) or from the Health Center.
2. Death or serious illness of an immediate family member—requires proper documentation.
3. State or federally accepted religious observance or an academic activity (you will be sent to the Office of Student Life to supply proof). This also has to be acceptable to the instructor of record, and you must present your case well ahead of time.

Students with a **documented excuse** (only as above) shall receive a provisional grade on the midterm based on the average of their other mid-term scores. Appropriate proof must be supplied in all cases to the teaching staff, either prior to the event or in any case **within 7 days** upon your return. Failure to do so will result in a zero score for that assignment.

Final Exam

No make-up of the final exam is permitted. MISSING THE FINAL EXAM IS A SERIOUS ISSUE. Students who miss the final exam shall receive a grade of "F" for the course. Students with an acceptable excuse (as provided in the list above), and if the student was achieving a passing grade (C- or better) in all course work up until the final exam, can arrange with the instructor for a process to remove the **incomplete (I grade)** from their records within the time period stated by University policy.

GENERAL

Course Participation:

Participation in this course is strongly encouraged. It helps students and teaching staff clarify material, and promotes scientific dialogue. Scientific data clearly shows that attendance and participation do benefit student understanding and do positively influence student grades. Typically, students who succeed attend lecture on a regular basis. Students are expected to attend all lectures, although it is discretionary. Note that students are responsible for any material discussed in their absence and for determining if any bonus assignments have been posted.

For students whose final scores fall right on the border of a grade change (ex. A-/B+), active engagement and participation in the course **may** increase your chances of receiving the higher score. *This would be exclusively at the discretion of the instructor and is **normally** based on the recommendations made by the teaching assistants.*

Course Materials and Handouts:

In addition to the textbook and class handouts, computer and internet access shall be required for this class. For students who do not otherwise have access to a computer or the internet, computers **may** be available at several campus locations including the main reading room in the library. Copies of the lecture PowerPoint's will also be available in Acrobat format (.pdf files) on the BIOL 1010 BLACKBOARD site after the lecture has taken place.

Homework and Revision:

Plan to devote approximately 2 hours per lecture hour, on average. This would equal 5 hours per week. This does not include classroom time.

Electronic Aids:

The use of electronic devices is prohibited during exams and assessments. The only exception shall be simple calculators, which must be declared and checked by the staff prior to use. No cell phones (or cell phone calculators), no iPads, or any other electronic devices are permitted. Leave all cell phones in your bags during examinations and tests (best not to bring them for security reasons). Turn the ringers off! The use of electronic aids to circumvent the spirit of any assessment is a very serious violation of policy, and is not permitted.

During other periods, please prevent your electronic devices from interfering with instruction. If you must take a phone call, please have the courtesy to step out.

Regrade policy:

Regrade requests will only be accepted within **one week** (7 days) from the date a scored assessment is returned. For each question requiring attention, you must submit a written explanation describing why you believe your response should be reevaluated. Please know we reserve the right to regrade your **entire assessment**. As a result, your score could either increase or decrease.

BEWARE: A random sample of all assessments will be photocopied after initial grading. If a comparison of the photocopy to the exam submitted for regarding indicates any alteration, the case will be forwarded to the Office of Judicial Affairs. **Never alter any exam, quiz, or other assessment material returned to you.**

Student Services:

Tutors are regularly available to assist all students of this course with one-on-one tuition. There are many resources on campus. For more information please visit, <http://www.csustan.edu/tutoring/>. Tutoring Services are located in the Library building, room L112. Every student should make an effort to visit with them and at a minimum have understanding of what services are available.

Student and faculty tutors, who have previously passed this class or administered similar material, are available from 8 am – 6 pm daily. This resource is available to all and is located in room Naraghi 124. No appointment is necessary and walk-ins are most welcome.

In addition, there is The Biology Club, which encompasses a group of former/present biology students who are available for consultation and advice. Check with the Biology Office in Naraghi Hall.

Disability Services:

If any student with any form of learning disability wishes or has registered for this course, they should contact the instructor as soon as possible so rapid arrangements can be made to address those needs. CSU Stan and this instructor are committed to making our courses accessible to all students, including students with limited mobility, impaired hearing or vision, and learning disabilities. Students who may need academic accommodation(s) services should visit the Disability Services web site at <http://www.csustan.edu/drs/contactus.html> and also contact the Disability Services Coordinator at the Disability Resource Services office (209) 667-3159 located in the Mary Stuart Rodgers Educational Services Gateway, Room MSR 210 or visit <http://www.csustan.edu/drs/> as early as possible in the semester so that appropriate arrangements can be made.

Group and independent assignments in BIOL 1010:

Some activities in BIOL 1010 involve group work and we encourage you to discuss any of the materials in the text, lectures, and/or discussion sessions with the instructors and other students, **but the work you submit must be your own for all of the following:**

- Quizzes
- Midterm and final assessments

That is, each student must generate their own answers **written in their own words** to all written questions. At the first instance of copied answers on assignments, no credit will be given *to all students with duplicate answers* and the assignments will be forwarded to the Vice-Chancellor for Undergraduate Affairs and the Office for Judicial Affairs. Subsequent copied assignments could lead to dismissal from course or the university (see section on Academic Integrity below).

Academic integrity:

Academic integrity is the foundation of an academic community and without it none of the educational or research goals of the university can be achieved. All members of the university community are responsible for its academic integrity. Existing policies forbid cheating on examinations, plagiarism and other forms of academic dishonesty. The current policies for CSU Stanislaus are described on the *Student Responsibilities web site pages* and also available from your instructor. The following general guidelines are adapted from Office of Judicial Affairs

(www.csustan.edu/JudicialAffairs/.../Student_Judicial_Process-Academic.pdf):

Examples of academic dishonesty include:

- receiving or providing unauthorized assistance on examinations
- using unauthorized materials during an examination
- plagiarism – using materials from sources without citations
- altering an exam and submitting it for re-grading
- fabricating data or references
- using false excuses to obtain extensions of time or to skip coursework

The ultimate success of a code of academic conduct depends largely on the degree to which the students fulfill their responsibilities supporting academic integrity.

These responsibilities include:

- Be honest at all times.
- Act fairly toward others. For example, do not disrupt or seek an unfair advantage over others by cheating, or by talking or allowing eyes to wander during exams.
- Take group as well as individual responsibility for honorable behavior. Collectively, as well as individually, make every effort to prevent and avoid academic misconduct, and report acts of misconduct that you witness.
- Do not submit the same work in more than one class. Unless otherwise specified by the instructor, all work submitted to fulfill course requirements must be work done by the student specifically for that course. This means that work submitted for one course cannot be used to satisfy requirements of another course unless the student obtains permission from the instructor.
- Unless permitted by the instructor, do not work with others on graded coursework, including in class and take-home tests, papers, or homework assignments. When an instructor specifically informs students that they may collaborate on work required for a course, the extent of the collaboration must not exceed the limits set by the instructor.
- Know what plagiarism is and take steps to avoid it. When using the words or ideas of another, even if paraphrased in your own words, you must cite your source. Students who are confused about whether a particular act constitutes plagiarism should consult the instructor who gave the assignment.
- Know the rules – ignorance is no defense. Those who violate campus rules regarding academic misconduct are subject to disciplinary sanctions, including suspension and dismissal.

Flexibility Clause:

Circumstances may arise during the course which may prevent the staff from fulfilling each and every component of this syllabus; therefore, the syllabus may be subject to small adjustments. Students will be notified prior to any changes, if possible.

Welcome & Great Learning!

PLEASE NOTE: Exams will use Scantrons. Scantrons will not be provided. Please buy a pack (Green) from the bookstore. Always bring Scantrons with you to all sessions.

Learning Outcomes for Biol 1010 (*numbers referenced in timetable above)

1. Recognize the relationship between structure and function at all levels: molecular, cellular, organism, and community.
2. Describe the flow of genetic information, the chromosome theory of heredity and the relationship between genetics and evolutionary theory.
3. Students will be able to explain the role of natural selection in the development of life on Earth.
4. Students will be able to identify the taxonomy and phylogenetic relationships of the major groups of organisms.
5. Students will recognize the ecological relationships between organisms and their environment.
6. Diagram and explain the major cellular and/or systemic processes.
7. Describe the underlying concept of homeostasis and the interconnections among physiological systems.

Your undergraduate learning outcomes: Program Learning Outcomes for the Biology Major

Graduates from the Biological Sciences programs will have demonstrated:

1. An understanding of the tenets of modern biology and an understanding of how cellular functions are integrated from the molecular level to the cellular level, through to the level of organism and functioning ecosystems.
2. An ability to develop and critique hypotheses and to design experiments, models, and/or calculations to address these hypotheses.
3. The ability to use appropriate instrumentation and computational tools to collect, analyze and interpret data.
4. The ability to read, evaluate, interpret, and apply numerical and general scientific information.
5. A familiarity with and application of safety in good laboratory and field practices.

BIOL 1010 – Spring 2020 - Lecture and Discussion Timetable on next page.

Note: Pre-lecture reading materials are due the day BEFORE the lecture at 11:30pm.

Note: Homework assignments are all on Connect. Each is due at 11:30 pm the date stated in that row of the timetable, i.e. HW1_1_2 is due at 11:30 pm.

Theme	No.	Pre-lecture Materials	Date			Lecture Topic	Homework	UNIT
Energy Drinks Unit	1	Unit 1 Introduction	T	28	Jan	Introductions & Expectations; Energy Drinks. Energy in Biology; Dehydration and hydrolysis		1
	2	Reading Module 1	R	30	Jan	Biomolecules - carbohydrates, lipids, and proteins		1
	3	Reading Module 2, Prep M 1	T	4	Feb	Digestive system overview; Enzymes in digestion. Digestion process of each molecule.	HW1_1_2	1
	4	Reading Module 3, Prep M 2	R	6	Feb	Organelles and cell processes; Membranes and particle movement. Cellular respiration; Pathways of non-carbohydrate digestion		1
	5	Reading Module 4, Prep M 3	T	11	Feb	Analysis of energy drink ingredients and effects. Metabolic uses and effects of vitamins and caffeine, How energy drinks actually work.		1
	6	Prep M 4	R	13	Feb	Mid-term Exam on Unit 1	HW1_3_4	1
Cancer Unit	7	Unit 2 Introduction	T	18	Feb	Normal vs. cancerous cell function		2
	8	Reading Module 1	R	20	Feb	Enzymes (some gene expression and mutations); Cell cycle		2
	9	Reading Module 2, Prep M 1	T	25	Feb	Cancer cell traits; Staging cancer. Homeostasis disruption		2
	10	Reading Module 3, Prep M 2	R	27	Feb	Detection: PCR, mutation ID, and medical diagnostics	HW2_1	2
	11	Prep M 3	T	3	Mar	Chemotherapy and radiation. Immunotherapy and CRISPR	HW2_2	2
	12		R	5	Mar	Mid-term Exam on Unit 2	HW2_3	2
Sickle-Cell Disease	13	Unit 3 Introduction	T	10	Mar	Characteristics of genetic diseases; Hemoglobin in respiratory and circulatory systems		3
	14	Reading Module 1	R	12	Mar	Sickle cell disease pathology; Structure and discovery of DNA molecule		3
	15	Reading Module 2, Prep M 1	T	17	Mar	DNA replication; Gene expression – DNA to protein synthesis		3
	16	Reading Module 3, Prep M 2	R	19	Mar	Inheritance patterns. Non-Mendelian inheritance patterns	HW3_1	3
	-	SRING BREAK	T	24	Mar	SRING BREAK		-
	-	SRING BREAK	R	26	Mar	SRING BREAK		-
	-	Cesar Chavez Day	T	31	Mar	Cesar Chavez Day	HW3_2	-
	17	Reading Module 4, Prep M 3	R	2	Apr	Genetic testing; Gene therapy; CRISPR	HW3_3	3
	18	Prep M 4	T	7	Apr	Mid-term Exam on Unit 3	HW3_4	3
Climate Change Unit	19	Unit 4 Introduction	R	9	Apr	Climate vs. weather; Biological organization		4
	20	Reading Module 1	T	14	Apr	Greenhouse gasses; Climate change linked with global warming evidence		4
	21	Reading Module 2, Prep M 1	R	16	Apr	Photosynthesis		4
	22	Reading Module 3, Prep M 2	T	21	Apr	Fossil fuels; Impacts of climate change on humans and other species. Community impacts and ecological relationships; Ecosystem impacts with biomes	HW4_1_2	4
	23	Reading Module 4, Prep M 3	R	23	Apr	Carbon footprint; Alternative energy and new technology		4
	24	Prep M 4	T	28	Apr	Mid-term Exam on Unit 4	HW4_1_2	4
Influenza Unit	25	Unit 5 Introduction	R	30	Apr	Virus structure and naming; Characteristics of life		5
	26	Reading Module 1	T	5	May	Viral infection and life cycle comparison; Cellular infection and body system impacts of the flu; Flu vaccines		5
	27	Reading Module 2, Prep M 1	R	7	May	Evolution in biology - Darwin and other theories of the time; Evolution in biology-Natural selection. Evidence for evolution; Viral evolution	HW5_1_2	5
	28	Reading Module 3, Prep M 2	T	12	May	Immune system function – organs and cellular components		5
	29	Prep M 3	R	14	May	Inflammatory response. Flu treatments, vaccines, and new methods		5
	Fin	FINAL EXAM	R	21	May	EXAM FINAL Thursday, May 21 From 11:15 a.m.-1:15 p.m.	HW5_1_2	1 to 5

Time	Monday	Tuesday	Wednesday	Thursday	Friday
6.00-7.00am					
7.00-8.00am					
8.00-9.00am					
9.00-10.00am					
10.00-11.00am					
11.00-12.00					
12.00-1.00pm		Biol 1010 - 12:30 to 13:45		Biol 1010 - 12:30 to 13:45	
1.00-2.00pm					
2.00-3.00pm					
3.00-4.00pm					
4.00-5.00pm					
5.00-6.00pm					
6.00-7.00pm					
7.00-8.00pm					
8.00-9.00pm					
9.00-10.00pm					