

Texas A&M International University, Department of Biology & Chemistry

**BIOL 1311 - Principles of Biology II**

Lecture: M, W, F 11:30-12:20 Room: LBV 102

**Instructor:** Dr. Jim Cohen, 379D LBVSC

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Office hours: M, W, F 9:30-11:30, or by appointment

**Course Objectives:** Plants permeate every aspect of our life, from the food we eat, to the materials with which we construct our homes, to the medicines we take when we are ill. Through this course, you will be exposed to various aspects of plants, botany, and biology, such as plant form and function, plant reproduction, plant diversity, economic botany, and other aspects of biology specific to plants. Additionally, you will have the opportunity to think critically, write, and present on certain aspects of botany.

According to Socrates, "Education is the kindling of a flame, not the filling of a vessel." By gathering and discussing botanical and biological knowledge throughout this course, you will have the opportunity to stoke your intellectual flame. If you do so, your flame will burn brighter, and your ability to create, analyze, and synthesize information will grow. If not, the kindling will sit idle, not helping build the fire of your botanical and biological intellect.

As a member of this course and of the TAMIU community, you have made the decision to take your education into your hands, and therefore, you will get out of this course as much as you would like. I, as the professor, have a responsibility to provide you with botanical and biological knowledge as well as a critical and analytical manner in which to view the natural world. You, as the student, have a responsibility not only to try to learn the material but also to think about it, question it, and discuss it.

**Student Learning Outcomes:** Upon successful completion of this course, students will be able to:

- apply critical thinking to examine primary literature concerning plant biology in order to effectively defend a conclusion.
- effectively discuss topics in economic botany and the multiple manners in which plants influence society, and vice versa.
- design an experiment using plants as a model system and analyze a data set to determine a conclusion.
- collaborate effectively on a research project and on a presentation of scientific results.
- describe the diversity of plant life on Earth, along with the structure and form of different groups of plants.
- describe the various manners in which plants reproduce.
- understand and describe basic plant physiology.

**Core-Curriculum Learning Outcomes:**

1. Critical Thinking: includes creative thinking, innovation, inquiry and analysis, evaluation, and synthesis of information. (SLOs: 1 & 2)
2. Communication Skills: Students will demonstrate their ability to communicate effectively by using written communication. (SLOs: 2)
3. Empirical and Quantitative Skills: includes the manipulation and analysis of numerical data or observable facts resulting in informed conclusions. (SLOs: 3)
4. Teamwork: includes the ability to work effectively with others to support a shared goal. (SLOs: 4)

**Text:** Reece, J. B., et al. 2011. *Campbell Biology*, ninth edition. Benjamin Cummings. Upper Saddle River, New Jersey, USA.  
Additional readings will be provided.

**Grading:**

Exam 1	100 points
Exam 2	100 points
Exam 3	100 points
Discussion and Written Assignments	150 points
Quizzes	100 points
<i>Lab</i>	<i>250 points</i>
Final Exam (Cumulative)	200 points
<b>Total</b>	<b>1,000 points</b>

**Quizzes:** Be prepared for weekly quizzes at the end of each Friday's class. If you do not hear otherwise, there will be a quiz on the class material covered from the preceding Friday until the Wednesday prior to the quiz.

**Extra Credit:** Should you want to improve your grade, extra credit assignments are available throughout the semester. There is a series of 80 questions that we will cover in this course. For each question that you provide a critical and thoughtful answer, you will receive 0.5 extra credit points. Questions must be turned in by specific deadlines, and you will be made aware of these. You can earn a total of 40 extra credit points.

**Make-up Exams and Late Assignments:** Turning in assignments after the deadline or scheduling a make-up exam will not be possible unless you discuss the matter with the professor at least 24 hours before the assignment is due or the test is administered. Should there be extenuating circumstances (i.e., severe illness, funeral, accident), contact me as soon as possible in order to reschedule, and be prepared to provide me with written corroboration of the disabling condition. Should you not follow these guidelines, you will receive a zero for the assignment or exam.

**Absences:** If you miss four labs, your grade will drop by one letter grade (i.e., a B will become a C).

**Class Behavior:** Be respectful of your classmates, and do not disturb them by talking in class, arriving late, or participating in other disruptive behavior. Furthermore, you are not permitted in class to use cellular phones, pagers, two-ways, or other similar types of devices. **If in class you decide to use your phone, you will be asked to leave.** Remember to act as you wish others would act.

**Twitter:** We have a class twitter account, @tamiu\_botany, and for Instagram, I have designated #tamiu\_botany to use in order for us to search photos that you post. You can use this account and hashtag to post your thoughts on readings and discussions, images of plants, or anything botanical. I will also use it periodically to send out reminders about assignments as well as interesting botanical information.

**Final Exam:** The final exam will be at 11 AM on Friday May 10, 2013.

**The instructor can change the class rules at any time throughout the semester, if he deems it necessary to do so.**

## Class Schedule

Week	Lecture Topic	Reading Assignment
Jan. 23	Introduction, What is a plant?	Halle 24-40
Jan. 25	Building Blocks of Life	Chapters 2, 3, and 5
Jan. 28	The Cell	Chapter 6
Jan. 30	The Central Dogma	Chapters 16 and 17
Feb. 1	Cell Division and Mutation	Chapters 12 and 13, <i>Life Ascending</i> 5
Feb. 4	Cell Transport	Chapter 7
Feb. 6	Basic Plant Morphology and Anatomy	Chapter 35.1
Feb. 8	Pollination Biology	Chapter 38, Halle 162-171
Feb. 11	Angiosperm Embryology 1	Chapters 30.3 and 38
Feb. 13	Angiosperm Embryology 2	Chapters 30.3 and 38, Halle 173-185
Feb. 15	Primary Growth	Chapter 35, Halle 101-108
Feb. 18	Axillary Growth	Chapter 35
Feb. 20	Secondary Growth	Chapter 35.4, Halle 252-265
Feb. 22	Angiosperm Diversity and Systematics	Chapter 30.3
Feb. 25	Review for Exam 1	
Feb. 27	<b>Exam 1</b>	
Mar. 1	Discussion on Angiosperm Diversity	Sowing for Apocalypse
Mar. 4	Underground Portion of Plant	Chapters 36.1 - 36.3 and 37, <i>Eden</i> 7
Mar. 6	Photosynthesis	Chapter 10, <i>Life Ascending</i> 3
Mar. 8	Photosynthesis and Respiration	Chapter 9, Halle 43-53
Mar. 11 - 15	Spring Break	
Mar. 18	Transport through Xylem and Phloem	Chapters 3 and 36
Mar. 20	Hormones, Essential Nutrients, and Tropisms	Chapter 39
Mar. 22	Economic Botany 1	Chapters 30.4 and 38.3
Mar. 25	Economic Botany 2	Chapters 30.4 and 38.3
Mar. 27	No classes	
Mar. 29	Discussion on Economic Botany	<i>Botany of Desire</i> - Potato
Apr. 1	Review for Exam 2	
Apr. 3	<b>Exam 2</b>	
Apr. 5	Algae 1	Chapter 28
Apr. 8	Algae 2	Chapter 28, Halle 108-119
Apr. 10	Lichens	Lichens
Apr. 12	Bryophytes 1	Chapter 29.1 and 29.2
Apr. 15	Bryophytes 2	Chapter 29.1 and 29.2
Apr. 17	Ferns and Fern Allies 1	Chapter 29.3
Apr. 19	Ferns and Fern Allies 2	Chapter 29.3
Apr. 22	Ferns and Fern Allies 3	Chapter 29.3
Apr. 24	Ferns and Fern Allies Discussion, Review for Exam 3	<i>A Natural History of Ferns</i>
Apr. 26	<b>Exam 3</b>	
Apr. 29	Gymnosperms 1	Chapter 30.1 and 30.2, Farjon 1, 2, 27
May 1	Gymnosperms 2	Chapter 30.1 and 30.2, Farjon 1, 2, 27
May 3	Plant Ecology	Chapters 52, 54.3, and 56, Halle 283-296
May 6	Plant Ecology Discussion	<i>Eden</i> 9 and 10

### **Nine tips to help you succeed in General Botany**

- 1) **Read the text before class.** This will help you be familiar with the material that we are covering in class that day. Reading before class provides you with three benefits. First, it allows you to have a basic understanding of what we will discuss; second, you have already familiarized yourself with the material, so hearing it in class is the second time you are going over the topic; and third, since you have already gained a basic comprehension of the topic, you know which parts you didn't understand, and therefore, you can ask questions on those specific issues.
- 2) **Being in class involves active participation, so take notes.** This allows you to digest the material that I am presenting, and put it in your own words. After class, you will be able to use these notes to review the material we cover.
- 3) **If I say something that does not make sense, if you want more information, or if you want to know why we are discussing a topic, ask a question.** If you ask the question, and I have the opportunity to clarify material for everyone in the class, then everyone understands the material better than they otherwise would have. If you do not feel comfortable asking questions in class, come and talk to me later, or send me an email.
- 4) **Review your notes.** After class, later that evening, or a couple of times a week, go over your notes. For every hour you are in class, you should spend 2-3 hours studying the class material. Since we will have weekly quizzes, this provides you with a good opportunity to review your notes at least once a week (although I would recommend more often). By reviewing, you continue to keep the material fresh in your mind, and this helps you to learn the material. Additionally, this helps you to not get overwhelmed before exams, because if you haven't kept up with the material, you are cramming. Cramming does not lead to one of the desired outcomes of the class: long-term understanding of and appreciation for botany.
- 5) **Study with your friends.** A weekly study group helps to ensure that you will review the material outside of class. If you do not understand something, perhaps one of your classmates does. Discuss these topics, try to figure out answers, and if something still does not make sense, come and see me.
- 6) **Attend lecture.** If you come on time to each class, you will get the greatest benefit from lectures and discussions. If you miss a class, you can get the notes from a friend, or come and see me.
- 7) **Attend lab.** Lab and lecture are intertwined. The topics that we discuss in lecture will be examined with hands-on lab exercises. This will help you retain the material better.
- 8) **Turn in all assignments.** If you do not turn in assignments, your grade suffers. For example, if you do not turn in half of the discussion assignments, your grade will drop by 7.5%. That means the highest grade you can receive is a 92.5%.
- 9) **Figure out how you learn.** People learn in different ways. The way that you and I learn may differ, so you have to discover the way that you learn best (e.g., reading, listening, writing, looking at diagrams, drawing diagrams, etc.) and try to learn in that framework.

# Policies of the College of Arts and Sciences

## (Required on all COAS Syllabi)

### Classroom Behavior

The College of Arts and Sciences encourages classroom discussion and academic debate as an essential intellectual activity. It is essential that students learn to express and defend their beliefs, but it is also essential that they learn to listen and respond respectfully to others whose beliefs they may not share. The College will always tolerate diverse, unorthodox, and unpopular points of view, but it will not tolerate condescending or insulting remarks. When students verbally abuse or ridicule and intimidate others whose views they do not agree with, they subvert the free exchange of ideas that should characterize a university classroom. If their actions are deemed by the professor to be disruptive, they will be subject to appropriate disciplinary action, which may include being involuntarily withdrawn from the class.

### Plagiarism and Cheating

Plagiarism is the presentation of someone else's work as your own. **1)** When you borrow someone else's facts, ideas, or opinions and put them entirely in your own words, you must acknowledge that these thoughts are not your own by immediately citing the source in your paper. Failure to do this is plagiarism. **2)** When you also borrow someone else's words (short phrases, clauses, or sentences), you must enclose the copied words in quotation marks as well as citing the source. Failure to do this is plagiarism. **3)** When you present someone else's paper or exam (stolen, borrowed, or bought) as your own, you have committed a clearly intentional form of intellectual theft and have put your academic future in jeopardy. This is the worst form of plagiarism.

Here is another explanation from the 2010, sixth edition of the *Manual of The American Psychological Association* (APA):

*Plagiarism:* Researchers do not claim the words and ideas of another as their own; they give credit where credit is due. Quotations marks should be used to indicate the exact words of another. *Each* time you paraphrase another author (i.e., summarize a passage or rearrange the order of a sentence and change some of the words), you need to credit the source in the text.

The key element of this principle is that authors do not present the work of another as if it were their own words. This can extend to ideas as well as written words. If authors model a study after one done by someone else, the originating author should be given credit. If the rationale for a study was suggested in the Discussion section of someone else's article, the person should be given credit. Given the free exchange of ideas, which is very important for the health of intellectual discourse, authors may not know where an idea for a study originated. If authors do know, however, they should acknowledge the source; this includes personal communications. (pp. 15-16)

Consult the Writing Center or a recommended guide to documentation and research such as the *Manual of the APA* or the *MLA Handbook for Writers of Research Papers* for guidance on proper documentation. If you still have doubts concerning proper documentation, seek advice from your instructor prior to submitting a final draft.

**Use of Work in Two or More Courses:** You may not submit work completed in one course for a grade in a second course unless you receive explicit permission to do so by the instructor of the second course.

**Penalties for Plagiarism:** Should a faculty member discover that a student has committed plagiarism, the student should receive a grade of 'F' in that course and the matter will be referred to the Honor Council for possible disciplinary action. The faculty member, however, may elect to give freshmen and sophomore students a "zero" for the assignment and to allow them to revise the assignment up to a grade of "F" (50%) if they believe that the student plagiarized out of ignorance or carelessness and not out of an attempt to deceive in order to earn an unmerited grade. This option should not be available to juniors, seniors, or graduate students, who cannot reasonably claim ignorance of documentation rules as an excuse.

**Caution:** Be very careful what you upload to Turnitin or send to your professor for evaluation. Whatever you upload for evaluation will be considered your final, approved draft. If it is plagiarized, you will be held responsible. The excuse that "it was only a draft" will not be accepted.

**Caution:** Also, do not share your electronic files with others. If you do, you are responsible for the possible consequences. If another student takes your file of a paper and changes the name to his or her name and submits it and you also submit the paper, we will hold both of you responsible for plagiarism. It is impossible for us to know with certainty who wrote the paper and who stole it. And, of course, we cannot know if there was collusion between you and the other student in the matter.

**Penalties for Cheating:** Should a faculty member discover a student cheating on an exam or quiz or other class project, the student should receive a "zero" for the assignment and not be allowed to make the assignment up. The incident should be reported to the chair of the department and to the Honor Council. If the cheating is extensive, however, or if the assignment constitutes a major grade for the course (e.g., a final exam), or if the student has cheated in the past, the student should receive an "F" in the course, and the matter should be referred to the Honor Council. Under no circumstances should a student who deserves an "F" in the course be allowed to withdraw from the course with a "W."

**Student Right of Appeal:** Faculty will notify students immediately via the student's TAMU e-mail account that they have submitted plagiarized work. Students have the right to appeal a faculty member's charge of academic dishonesty by notifying the TAMU Honor Council of their intent to appeal as long as the notification of appeal comes within 5 business days of the faculty member's e-mail message to the student. The *Student Handbook* provides details

## **UConnect, TAMIU E-Mail, and Dusty Alert**

Personal Announcements sent to students through TAMIU's UConnect Portal and TAMIU E-mail are the official means of communicating course and university business with students and faculty – not the U.S. Mail and not other e-mail addresses. Students and faculty must check UConnect and their TAMIU e-mail accounts regularly, if not daily. Not having seen an important TAMIU e-mail or UConnect message from a faculty member, chair, or dean is not accepted as an excuse for failure to take important action. Students, faculty, and staff are encouraged to sign-up for *Dusty Alert* (see [www.tamtu.edu](http://www.tamtu.edu)). *Dusty Alert* is an instant cell phone text-messaging system allowing the university to communicate immediately with you if there is an on-campus emergency, something of immediate danger to you, or a campus closing.

## **Copyright Restrictions**

The Copyright Act of 1976 grants to copyright owners the exclusive right to reproduce their works and distribute copies of their work. Works that receive copyright protection include published works such as a textbook. Copying a textbook without permission from the owner of the copyright may constitute copyright infringement. Civil and criminal penalties may be assessed for copyright infringement. Civil penalties include damages up to \$100,000; criminal penalties include a fine up to \$250,000 and imprisonment.

## **Students with Disabilities**

Texas A&M International University seeks to provide reasonable accommodations for all qualified persons with disabilities. This University will adhere to all applicable federal, state, and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal education opportunity. It is the student's responsibility to register with the Director of Student Counseling and to contact the faculty member in a timely fashion to arrange for suitable accommodations.

## **Incompletes**

Students who are unable to complete a course should withdraw from the course before the final date for withdrawal and receive a "W." To qualify for an "incomplete" and thus have the opportunity to complete the course at a later date, a student must meet the following criteria:

1. The student must have completed 90% of the course work assigned before the final date for withdrawing from a course with a "W", and the student must be passing the course;
2. The student cannot complete the course because an accident, an illness, or a traumatic personal or family event occurred after the final date for withdrawal from a course;
3. The student must sign an "Incomplete Grade Contract" and secure signatures of approval from the professor and the college dean.
4. The student must agree to complete the missing course work before the end of the next long semester; failure to meet this deadline will cause the "I" to automatically be converted to a "F"; extensions to this deadline may be granted by the dean of the college.

This is the general policy regarding the circumstances under which an "incomplete" may be granted, but under exceptional circumstances, a student may receive an incomplete who does not meet all of the criteria above if the faculty member, department chair, and dean recommend it.

## **Student Responsibility for Dropping a Course**

It is the responsibility of the STUDENT to drop the course before the final date for withdrawal from a course. Faculty members, in fact, may not drop a student from a course without getting the approval of their department chair and dean.

## **Independent Study Course**

Independent Study (IS) courses are offered only under exceptional circumstances. Required courses intended to build academic skills may not be taken as IS (e.g., clinical supervision and internships). No student will take more than one IS course per semester. Moreover, IS courses are limited to seniors and graduate students. Summer IS course must continue through both summer sessions.

## **Grade Changes & Appeals**

Faculty are authorized to change final grades only when they have committed a computational error or an error in recording a grade, and they must receive the approval of their department chairs and the dean to change the grade. As part of that approval, they must attach a detailed explanation of the reason for the mistake. Only in rare cases would another reason be entertained as legitimate for a grade change. A student who is unhappy with his or her grade on an assignment must discuss the situation with the faculty member teaching the course. If students believe that they have been graded unfairly, they have the right to appeal the grade using a grade appeal process in the *Student Handbook* and the *Faculty Handbook*.

## **Final Examination**

Final Examination must be comprehensive and must contain a written component. The written component should comprise at least 20% of the final exam grade. Exceptions to this policy must receive the approval of the department chair and the dean at the beginning of the semester.