

BOT2010C Introductory Botany

Fall 2021 - 3 credits, letter grade

Lecture: Tuesdays and Thursdays, period 4 (10:40-11:30), Room 211 Bartram Hall

“Lecture” Instructors

Francis E. “Jack” E. Putz,

Distinguished Professor fep@ufl.edu Office: 209 Carr Hall, 392-1486

Office hours: Friday 1-2 PM via Zoom, 2-3 in person in the courtyard north of Bartram-Carr

Lab Instructor

MacKenzie Smith

Office: Dickinson

Laboratory Coordinator

mackenziesmith@ufl.edu (503) 403-8941

Office: 111 Rolfs Office hours by appointment

Structures and functions of cells, tissues, and organs of flowering plants. Students with credit in BSC 2005 or BSC 2010 cannot register for this course; they should take BOT 2011C. **Attributes:** General Education - Biological Science

This course provides three opportunities to conduct original research (with lots of instructor input). The first research project is on lawn ecology, the second on duckweed growth, and the third on plant biomechanics. Conduction of this research will require mastery of the rudiments of statistics (contingency tests, comparison of distributions with t-tests, and regression), but little mathematical acumen is required.

The lecture portion of the course has three main sections:

Part 1: How plants meet their water and nutrient needs (Exam 1).

Part 2: How plants grow and reproduce (Exam 2).

Part 3: Plant genetics, evolution, and diversity (Exam 3).

Throughout our studies in these core areas, we will gain experience with:

- The scientific method
- Evaluating social issues such as transgenic crops and climate change
- Working as part of a team to solve problems
- Presenting your work orally and in written forms.

Texts and Supplies: *Laboratory Manual for Introductory Botany (BOT2010C)*. Available immediately before classes commence at Target Copy on University Avenue across from UF's Main Library.

--Additional reading will be posted on the course's Canvas e-learning site.

Software: WORD or equivalent word-processing software. EXCEL with the statistic add-on.

Course grades will be determined as follows:

Quizzes on assigned reading	= 12%
In-class and at-home exercises	= 16%
Lecture exams	= 30%
<u>Laboratory</u>	<u>= 42%</u>

Lecture readings and assignments: All lecture readings and assignments should be completed prior to coming to lecture. For example, before coming to class on August 24th, you should have already read the assigned chapter on plant chemistry—see syllabus for URLs. Please take into serious consideration the expectation that for each hour in class (i.e., “lecture”), you are supposed to spend 2 hours working on your own. You should take a substantial portion of this 2 hours to read about a topic BEFORE coming to class because lecture periods will be dedicated to using this knowledge, not as information dumps. As motivation for you to read before class (and as a way to assess what portions of the reading gave you trouble), a substantial portion of your grade in this course will be based on your having successfully completed a series of on-line chapter quizzes that are due before class.

Laboratory: Your laboratory grade will be based on pre-lab questions, post-lab quizzes and assignments, and your research projects. Please consult your lab instructor for details concerning preparation for the lab quizzes and completing assignments. Details regarding the research projects and poster symposium will be provided as the time approaches. Pre-lab questions and the previous week’s post-lab assignments and quizzes will be due at the beginning of your lab section unless otherwise stated.

Course Pre-Requisites / Co-Requisites

There are no pre- or co-requisites for this course.

Attendance Policy, Class Expectations, and Make-Up Policy

Attendance is required and essential for success in this course. Although attendance will not be taken, many assignments are completed and submitted during class. If you have a **valid documented excuse and notify us in advance**, you will be permitted to make up missed assignments for the full point value. Excused absences must be consistent with university policies in the [Undergraduate Catalog](#) and require appropriate documentation. Additional information can be found in [Attendance Policies](#).

Grading Policy

Percent	Grade
90.0 - 100.0	A
87.0 - 89.9	A-
84.0 - 86.9	B+
81.0 - 83.9	B
78.0 - 80.9	B-
75.0 - 79.9	C+
72.0 - 74.9	C
69.0 - 71.9	C-
66.0 - 68.9	D+
63.0 - 65.9	D
60.0 - 62.9	D-
0 - 59.9	E

Remember that the time to improve your grade is *during* the semester, not after final grades are calculated. Grades will only be changed at the end of the semester if there were calculation errors.

More information on UF grading policy may be found at: [UF Undergraduate Catalog Grades and Grading Policies](#)

Students Requiring Accommodations

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the [Disability Resource Center](#). It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via ufl.bluer.com/ufl/.

University Honesty Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." [The Honor Code](#) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see the [Notification to Students of FERPA Rights](#).

Campus Resources:

Health and Wellness

U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352 392-1575 so that a team member can reach out to the student.

Counseling and Wellness Center: counseling.ufl.edu/cwc, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS): Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or police.ufl.edu

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling.

Library Support, Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.

Course schedule

		Lecture Topic and Readings	T or W Lab	Lab Notes
T	Aug 24	Introduction: Science as a Way of Knowing: ZOOM Lecture at time of class. Read Appendix I on Philosophy of Science in lab manual, also available on CANVAS	No lab	
R	26	Chemistry of Life, mostly water. Recorded lecture.) The Chemical Foundation of Life - Biology LibreTexts (GOOGLE)		
T	31	Lawn Ecology with some Statistics (live lectures in 211 Bartram from here out, if all goes well) Read Lab #2 before lecture	1. Introduction to plants	Bring hand lens
R	Sept 2	Photosynthesis. https://en.wikipedia.org/wiki/Photosynthesis		
T	7	Energy & Carbon. https://en.wikipedia.org/wiki/Cellular_respiration	2. Lawn ecology	Outdoors
R	9	Respiration. Berg, L. Introductory Botany, chapter 4 (CANVAS)		
T	14	Carbon cycle. https://en.wikipedia.org/wiki/Carbon_cycle	3. Photosynthesis, respiration, and growth experiment introduction	Before lab, learn about duckweeds (GOOGLE)
R	16	Water		
T	21	Water, Wood, & SPAC https://organismalbio.biosci.gatech.edu/nutrition-transport-and-homeostasis/plant-transport-processes-i/ http://www.science4all.org/article/the-amazing-physics-of-water-in-trees/	4. Water Movement in and through Plants (SPAC)	
R	23	Leaves. https://en.wikipedia.org/wiki/Leaf		
T	28	Exam 1	5. Plant growth project - set up experiment	
R	30	Flowers & fruits. https://organismalbio.biosci.gatech.edu/growth-and-reproduction/plant-reproduction/ Primary & secondary growth. Berg, L., Introductory Botany, chapter 5 (CANVAS)		
T	Oct 5	Plant Cells. https://en.wikipedia.org/wiki/Plant_cell	6. Flowers & fruits	
R	7	Biomechanics		
T	12	Organelles. https://www.youtube.com/watch?v=TvQNRyWIKws	7. Biomechanics	Bring plant materials to test (N > 15)
R	14	Nitrogen Enzymes, Berg, L., Introductory Botany, pages 36-38 (CANVAS)		
T	19	Plant Hormones	8. Plant interactions	Go to NATL
R	21	Nitrogen		
T	26	Nitrogen Cycle. https://en.wikipedia.org/wiki/Nitrogen_cycle		

R	28	Exam 2	9. Growth experiment data collection	
T	Nov 2	DNA & protein synthesis. https://en.wikipedia.org/wiki/Protein_biosynthesis	10. Mitosis and meiosis	
R	4	Genotype to phenotype. Berg, L., Introductory Botany, chapter 14 (CANVAS)		
T	9	Evolution through natural selection http://en.wikipedia.org/wiki/Natural_selection	11. Genetics (fern)	
R	11	NO CLASS		
T	16	Speciation & diversity. Berg, L., Introductory Botany, chapter 17 (CANVAS)	12. Plant life history strategies (and growth data analysis help)	
R	18	TBA		
T	23	TBA	13. Poster Presentations See Appendix III	Send e-poster in advance
R	25	NO CLASS—THANKSGIVING		
T	30	Genetic Frontiers Plant ecology, Florida focus		
R	Dec 2	Plant ecology, Florida focus		
T	7	Ecology of Florida	No lab	