

**IB 103: Introduction to Plant Biology**  
**Course Syllabus**  
**Spring 2023**

INSTRUCTORS

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For both instructors email is the GREATLY preferred method of contact. Please only phone in an emergency.

TEACHING ASSISTANTS

Elsa de Becker ([elsad2@illinois.edu](mailto:elsad2@illinois.edu)) - Lab TA  
Jinjin Song ([jinjins2@illinois.edu](mailto:jinjins2@illinois.edu)) - Lab TA  
Lance Jones ([lanceej2@illinois.edu](mailto:lanceej2@illinois.edu)) - Grader/Lab TA

COURSE INFORMATION

**Lecture:** 213 Gregory Hall, 3:00 - 3:50 pm, Mon/Wed/Fri

**Lab:** 2082 Natural History Building (Check lab section for time)

**Credit:** 4 hours

**Moodle Course Website:** <https://learn.illinois.edu/>

REQUIRED TEXTBOOK and MATERIALS (available at Illini Union Bookstore)

**Textbook: Stern's Introductory Plant Biology**, 15<sup>th</sup> edition, James E. Bidlack and Shelby H. Jansky (2020), McGraw-Hill Education, ISBN13: 978-1260240832.

**Feel free to use the online version ([here](#)) or 14<sup>th</sup> edition, if preferred.**

**General information:** Plants, especially the angiosperms, cover the earth surface, convert solar energy to chemical energy through photosynthesis, and provide raw materials for food, fuel, clothing, and shelter. Humanity and civilization depend on plants. Plant biology is the scientific study of plants and their relationship with the environment. This course provides comprehensive coverage of plant cells, organs, growth, reproduction, anatomy, morphology, taxonomy, genetics, and ecology. Laboratory and greenhouse experiences complement classroom activities. This course is intended to help students understand and appreciate the complexity and relationships of living systems and the role of plants in human society and the terrestrial environment. It should take approximately 8 – 12 hours of dedicated time per week to complete the readings and assignments. Specific learning outcomes include:

1. Understand the attributes and complexity of living organisms.
2. Attain thorough knowledge of the chemical elements in cells.
3. Assess the main properties and functions of major plant organs.
4. Evaluate the source and consumption of energy in plants.
5. Understand the binomial system of nomenclature in plant classification.
6. Explain the transition from seedless vascular plants to seed plants.
7. Understand and appreciate the cause and consequence of diversification in angiosperms.
8. Consider both positive and negative impacts of agriculture on our society and environment.

#### SUGGESTED LEARNING STRATEGIES FOR LECTURE

1. Read the textbook (following lecture outline) prior to and after each lecture.
2. Participate in all active learning exercises.
3. Learn definitions of unfamiliar terms that in slides and assigned reading materials.
4. Keep up with assignments and preparing for quizzes and exams, focusing on the most important concepts and content that you will need to master in order to do well on exams.
5. Review figures in the textbook and in lecture presentations to practice generating and interpreting figures. Pay particular attention to understanding how to interpret figures and tables.
6. Focus on those parts of the text that relate to lecture material.
7. Master relevant computational skills and data interpretation skills that are critical components of the scientific process.

#### GRADING INFORMATION

This course has both lecture and lab components. The lecture component will comprise 70% of your final grade, and the laboratory component will comprise 30%. For the

lecture component, grades will be based upon:

A. Quizzes covering information for each topic: **120 points**

Three major quizzes will be assigned, 40 points each, for 120 points total. You will have 30 minutes to complete each quiz online with a specific deadline date.

B. Online weekly forum participation: **60 points**

To encourage interactions among students, participation in online discussion forum is required with 4 points per week for one post on suggested topics and one response to someone else's post, 2 points each.

C. In-class Moodle or poll questions or homework over lecture topics: **160 points**

In class activities are graded using online exercises, 4 points per lecture, 2 point per question: 1 point for participation and 1 point for correct answer. For those who missed a lecture, there will be a number of assignments dropped at the end of the semester, and you can also receive an extended deadline for an excused absence.

D. Exams: **360 points**

The first two exams will be **non-cumulative**, 120 points each. All material covered in lectures, text readings, homework, and labs will be eligible for inclusion.

Exams will be held on **Monday March 6<sup>th</sup>** and **Monday April 10<sup>th</sup>**. There will be **NO MAKEUP EXAMS**. If you have an unavoidable medical or personal emergency, an exception may be granted. Exams will cover lecture materials and relevant chapters in the textbook. Format of exams can be a combination of short answer, multiple choice, and true/false.

The Final Exam will be **on Monday May 8<sup>th</sup> from 8:00-11:00 AM**

If you must miss an exam, notify the instructor in advance if possible. If you are ill, go to the health center and obtain written verification of your illness. All absences must be properly documented and verified. Unexcused exam absences will be recorded as zero. If the final exam is missed due to a legitimate, verified illness, a makeup exam will be administered at another time.

The grading breakdown for the lab sessions is:

**Pre-lab quizzes:** 5 points each

**Weekly lab assignments:** 10 – 45 points each.

All material covered in lectures, text readings, homework, and labs will be eligible for inclusion in exams. Make a note of the exam and lab dates. Acceptable excuses for missing labs or exams are personal illness or tragedy in your immediate family. Notify your TA or Nick Morphew before the exam if you have a problem. Travel, weddings,

other courses, etc., must be planned around the lecture, laboratory, and final exam schedule. If you have any questions regarding these policies, please contact Dr. Bush.

### **Grading Scale**

90 – 100%	A
80 – 89%	B
70 – 79%	C
60 – 69%	D
<60	F

+ or – letter grades may be awarded **sparingly** for scores at the margins.

**Class Attendance:** Your grade will benefit from attendance and from reading the assigned material before lectures. In general, students that regularly attend lectures achieve a letter grade higher than those who do not. We will have in-class activities through Moodle or other online functions. During most lecture periods one or two questions will count for credit (1 point for participation and 1 point for correct answer). You may earn up to 40 points towards your grade in this way.

**Class Participation:** We encourage you to ask questions during and after lectures. This allows you to check your understanding of lecture material, and it allows us to clarify difficult or confusing concepts.

### COURSE POLICIES

#### **General:**

This course will follow all policies in the Student Code: <http://studentcode.illinois.edu/>.

#### **Academic Integrity:**

This course will follow Article 3 of the Student Code:

[http://studentcode.illinois.edu/article3\\_part1\\_3-101.html](http://studentcode.illinois.edu/article3_part1_3-101.html).

This rule defines infractions of academic integrity, which include but are not limited to cheating, fabrication, and plagiarism. You are responsible for understanding and avoiding these infractions. Plagiarism while writing the scientific manuscripts will be carefully monitored. If you do not feel you fully understand what constitutes plagiarism, see your TA or Dr. Bush or Nick Morphew.

#### **Accommodations:**

If you require special accommodations, please contact Dr. Bush and arrange a time at the Testing Accommodations Center (TAC). All accommodations will follow the procedures as stated in Article 1-110 of the Student Code ([http://studentcode.illinois.edu/article1\\_part1\\_1-110.html](http://studentcode.illinois.edu/article1_part1_1-110.html))

### Tentative Schedule and Dates:

Week	Date	Lecture ( Reading chapter)	Lab
1	1/16	Martin Luther King day	No Labs
	1/18	Introduction	
	1/20	What is Plant Biology (1)	
2	1/23	The Nature of Life (2)	Introduction to the Scientific Method
	1/25	The Nature of Life (2)	
	1/27	The Nature of Life (2)	
3	1/30	Plant Cells (3)	Experimentation Review & Set Up
	2/1	Plant Cells (3)	
	2/3	Plant Cells (3)	
4	2/6	Plant Tissues (4)	The Cell
	2/8	Plant Tissues (4)	
	2/10	Roots and soil (5)	
5	2/13	Roots and soil (5); <b>Quiz 1</b>	Roots
	2/15	Stems (6)	
	2/17	Stems (6)	
6	2/20	Leaves (7)	Fast Plant Phenotyping
	2/22	Leaves (7)	
	2/24	Flowers, fruits, and seeds (8)	
7	2/27	Flowers, fruits, and seeds (8)	Flowers, Fruits, and Seeds (Sexual Reproduction)
	3/1	Water transport in plants (9)	
	3/3	Water transport in plants (9)	
8	3/6	<b>Exam 1</b>	Leaves and Water Relation
	3/8	Plant metabolism (10)	
	3/10	Plant metabolism (10)	
9	3/13	<b>Spring Break</b>	
	3/15	<b>Spring Break</b>	
	3/17	<b>Spring Break</b>	
10	3/20	Growth and development (11)	Photosynthesis
	3/22	Meiosis and alternation of generations (12)	
	3/24	Evolution overview (15)	
11	3/27	Plant Names and classification (16); <b>Quiz 2</b>	Stems and Asexual Reproduction
	3/29	Domain Bacteria (17)	
	3/31	Kingdom Protista (18)	
12	4/3	Kingdom Protista (18)	Leaves
	4/5	Kingdom Fungi (19)	
	4/7	Bryophytes (20)	
13	4/10	<b>Exam 2</b>	Cellular Respiration
	4/12	Bryophytes (20)	

	4/14	Seedless vascular plants (21)	
<b>14</b>	4/17	Seedless vascular plants (21)	Plant Adaptations and Biodiversity
	4/19	Gymnosperms (22)	
	4/21	Gymnosperms (22)	
<b>15</b>	4/24	Angiosperms (23); <b>Quiz 3</b>	Biotechnology and GMOs
	4/26	Angiosperms (23)	
	4/28	Angiosperms and civilization (24)	
<b>16</b>	5/1	Ecology overview (25)	
	5/3	Biomes (26) (End of lecture)	
	5/5	Finals Begin	
<b>17</b>	5/8	<b>Final Exam (8:00 AM)</b>	