The Biology of Plants (BIOS 317) Syllabus

Instructor: Dr. Sabrina E. Russo
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Office hours: Tuesdays 12:30-1:45pm

Course website: Blackboard – *Please check your email and Blackboard account **daily** for course information and updates.*

Lectures: MWF 09:30-10:20 am in 401 Manter Hall

Laboratory: W 2-5pm, Beadle S130

Required textbooks: Mauseth's Botany, 6th edition; Mauseth's Botany: A Lab Manual, 6th edition

Other required readings in the course schedule are from PDFs that will be posted on Blackboard.

Goals of this course:

(1) To introduce you to the study of plants, including their anatomy, morphology, growth, development, and genetics in an ecological and evolutionary context

(2) To be able to identify important plant structures at the cellular, tissue, organ, and organism-levels and describe their functions

(3) To describe how the link between structure and function relates to a plant's performance in a particular environment

(4) To learn the evolutionary relationships of the major plant lineages and identify their defining characteristics and key innovations

(5) To gain experience with important laboratory, greenhouse, and field skills used in the study of plants

(6) To gain an appreciation and experience with the scientific process, including collecting, analyzing, and interpreting data related to plant structure and function and writing a scientific manuscript.

(7) To demonstrate the importance of plants to all aspects of our lives and to the functioning of the Earth

(8) To gain experience with applications of plant biology to problems in related scientific fields, such as environmental climate change and agriculture

(9) To perfect important life-skills, such as how to communicate effectively, work together in teams, reason quantitatively, and understand and explain complicated concepts.

Prerequisites and expectations of this course: Prerequisites are LIFE 120 and 121. The material in this course assumes knowledge of general biology, ecology, and evolution, so haven taken (or currently taking) BIOS 207 or BIOS 220, is also helpful, but not required. I expect that you will attend all course meetings, complete assignments, prepare for and participate in labs, lectures, and discussions. Class attendance and participation are part of your grade. If there is any disruptive activity, including use of cell phones or laptops, I will ask you to stop or leave the class.

I welcome students to interrupt me (politely!) at any time to ask a question. I take an active-learning approach in this course, and provide a diversity of activities for students to engage in the learning

process. Students are encouraged to take responsibility for their own learning and so are expected to actively participate in course activities, which include preparing for lectures and labs by doing the required readings, participating in-class activities, including impromptu thought questions during lecture that may sometimes require small-group discussion, and small-group activities, and discussions. Students should consult with me in advance when they anticipate an absence from a course meeting to make sure the absence is excusable. Help outside of class may only be available to students who do not miss class meetings regularly.

You are expected to abide by the Student Code of Conduct (http://stuafs.unl.edu/ja/code/three.shtml). ***I am required to report all cases of cheating to the University administration. Please do not put either of us in a position where we must deal with this!*** I encourage you to work in groups for homework assignments by discussing course material and helping each other understand concepts. However, when you write out an answer in any assignment, ***you must answer in your own words. Copying text from readings, web sites, or each other is plagiarism and will be treated as cheating.***

Blackboard & Communication: I will post course materials and grades on the course Blackboard site, and the schedule of activities, readings, and assignments for course meetings will also be updated on Blackboard.. We will use ONLY the Blackboard site labelled **Section 150** (not Section 151). The main Blackboard page has instructions for new users. **Make sure that the email address associated with your Blackboard account is the one that you check regularly.** Check your email and Blackboard account **daily** for course information and updates.

If you have any questions about any aspect of this course or about biology in general please come see me! You can talk to me after class, during office hours, or by appointment. If you have a simple question you can email me (srusso2@unl.edu) with BIOS 317 in the subject line. I get lots of spam and I might delete your message if I don't immediately recognize your name or the subject doesn't seem relevant. You can also email me through the Blackboard system, but if you wish to send an attachment (such as an assignment), it is best to email me directly, not through Blackboard.

Assessments:

Lecture Exams:	30%
Quizzes and Assignments:	25%
Final Project:	25%
Laboratory Practical Exams:	20%

No incomplete grades (I) will be given without prior arrangement. Consult http://registrar.unl.edu/resources/AcademicServicesHandbook.pdf for the University policies regarding I, pass/No Pass, Drop and W grades. These policies will be observed. Consult http://www.unl.edu/regrec/calendar/calendar_main.shtml for important ending dates for pass/NoPass, Drop and W options. After certain dates in the semester, these grades are no longer options. All grades are final after January 15, 2017. This means that any grade corrections must have been cleared by that date.

As soon as I finish grading assignments, I will post the scores on Blackboard. At any time, you can find out your course grade up to that assignment and your scores on individual assignments using Blackboard. It is your responsibility to check to see that the information is correct. You should be sure to collect graded assignments, not only to have a record but also to help you prepare for exams.

Lecture Exams: There will be four exams, all weighted equally. Three exams will be held in-class in lecture on the dates noted in the *Course Schedule*. Exam 4 will be a comprehensive final exam given in the first hour of the designated final exam period **(check the online final exam schedule)**. All exams will cover material from either lecture or laboratory portions of the course that has been covered up to that point. All exams are cumulative in that material continues to build upon previous material covered in the course. Exams will be graded on a 100-point scale, usually with opportunities for bonus points. They will consist primarily of short- and long-answer questions. When determining the final course grade, the lowest lecture exam grade will be dropped. The final exam grade cannot be dropped. The remaining three exam grades will be weighted equally towards the overall exam grade.

Exams will be given only during the designated times at proctored locations, and there are no makeup exams. Permission to miss an exam will be given only in cases involving extreme or extenuating circumstances. Request for permission to be excused from an exam will be considered only if the request is made *prior* to the exam, not after or during the exam and requires appropriate documentation (for example, a letter from the doctor). If you are on an official athletic or other University team, please arrange to see me immediately at the beginning of the semester. Unexcused, missed exams will count as zero points, and which would be the exam grade that is dropped in the calculation of the final grade.

Quizzes and Assignments: There will be 5-10 quizzes, either during lecture or laboratory meetings. Quizzes will be similar to the kinds of short-answer questions that you may see on exams, but posed using the Immediate Feedback Assessment Technique forms (I will explain these at the first quiz). Each quiz will be graded on a 10-point scale and converted to a percentage. Each student's two worst quiz grades will not be counted in his/her final grade. There are no make-up quizzes – if you miss a quiz, you will receive zero points for it.

There will be two other types of assignments. We will have an **in-class Discussion** of recent scientific literature on leaf functional traits during one lecture meeting. You will be required to read two scientific papers and answer questions about them before coming to class. There will also be three **SciLit** assignments in which you will read a scientific paper and answer questions about it. These assignments will be completed on Blackboard – check the Assignments folder and Schedule for due dates. Late assignments will not be accepted, except following the policy described above for Exams.

Laboratory Exams: There is one three-hour laboratory meeting per week, and attendance at all laboratory meetings is mandatory. The laboratory meetings will consist of field trips, greenhouse work, or wet laboratory work – see the Course Schedule. There will be two laboratory practical exams, one during a lab meeting times and the other during the second hour of the designated final exam period. When determining the final course grade, the lowest lab practical exam grade will be dropped. The same rules apply for makeup all lab practical exams as for lecture exams (see above).

Final Project: Students will work in groups of 4-6 students on research projects based on data collected in greenhouse experiments or field studies (conducted during the field trips). Students will collect, analyze, and interpret their data, with guidance on statistical analysis provided by me. For the final lab meeting of the semester (in the 15th week), we will have a **BIOS 317 Student Symposium**, in which each student group will give a 15-minute power point presentation on their Final Project. There are four assignments associated with the Final Project: (1) an Abstract, (2) a Presentation, (3) a Draft Paper, and (4) a Final Paper. While the presentation will be done by student groups, each individual student will turn in a 300- word Abstract, individually written, summarizing your project by **Monday of**

the 11th week by 5pm. Each student is also required to turn in a Draft and Final Paper, individually written, based on the group's results, for their final project. The paper will be written in the style of a scientific publication. Each member of a group will include the same data in the final paper (that is, the data that the group collected), but each student must write the Draft and Final Papers in their own words. The Draft Paper will be due by **Monday of the 13th week by 5pm**. The Final Paper is due by **Monday of finals week at 5pm**. The Abstract, Presentation, and Final Paper will each be worth 20%, 30%, and 50%, respectively, of the grade for the Final Project. The Draft Paper will not be graded, but I will give you preliminary comments on it so that you can improve it for the Final Paper. Although the Draft Paper is not graded, if it does not represent a reasonable effort, then one letter grade will be deducted from the Final Paper. See **Final Project Instructions** for more details. Turn in all assignments associated with the Final Project to me by email by 5pm of the due date, using Microsoft Word (text documents) or Powerpoint (presentation) formats (a PDF is also acceptable for the presentation only).

Rules for Late Assignments: If you know that an excusable absence will affect your ability to turn in an assignment on time, then you must speak with me ahead of time to make sure that your absence is indeed excusable. Otherwise, your assignment will be considered late, and there are stiff penalties for late assignments in this course. For assignments on Blackboard, there will be no credit given for late assignments. For other assignments, if an assignment is turned in late by three hours or less, then 1/3 of a letter grade will be deducted from the final grade. After that, one letter grade will be deducted for every day (24-hour period) that the paper is late. In other words, if you turn in your assignment 25 hours late, then if the paper grade was an A, then you will receive a C. This policy applies to assignments, not quizzes or exams (see above).

Grading Scale (% of available points):

A+	97.0 – 100
A	93.0 – 96.9
A-	90.0 – 92.9
B+	87.0 – 89.9
B	83.0 – 86.9
B-	80.0 – 82.9
C+	77.0 – 79.9
C	73.0 – 76.9
C-	70.0 – 72.9
D+	67.0 – 67.9
D	63.0 – 66.9
D-	60.0 – 62.9
F	<59.9%

Other important information: Students with disabilities are encouraged to contact the instructor for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Nebraska-Lincoln to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Services for Students with Disabilities (SSD) office, 132 Canfield Administration, 472-3787 voice or TTY.

Tips for Doing Well in University Courses

The most common problem students have is that their study skills are not adequate for university-level classes. You should seriously evaluate your study habits and consider some of the suggestions below. I often find that students who are doing poorly are simply "looking at their notes". Studying for any class requires more commitment than just reading notes or the text. Different individuals require different approaches, so you will have to tailor any suggestions to your own needs. Based on my own experience and recommendations from others, here are some suggestions for you to consider to help you achieve a good grade in this class. These ideas foster active, aggressive learning with a goal toward understanding rather than memorization.

- **Prepare for class before coming.** Read your text before coming to lecture, looking for general concepts rather than getting lost in the details. This will provide a framework on which the lecture will build.
- **Sit in the front part of the lecture auditorium.** Study after study has supported the contribution to overall success from this simple behavior.
- **Ask questions during lecture or laboratory meetings** when you do not understand. If you do not understand, it is very likely that others do not understand, also, so it is beneficial to everyone when students ask questions.
- **Review your notes shortly after each class meeting**, while the material is still fresh. Use your text or a study partner to help fill in any gaps in your understanding. Ask your professor or lab instructor if you still do not understand something.
- **Learn how to take good notes** – this usually means writing down as much information as possible, although some people learn better by uninterrupted listening. However, don't use this as an excuse to be lazy and not take notes during class, because for most people listening simply is not enough.
- **During a lecture, listen for the main ideas and organize the details around them**. Edit your notes later to make them more understandable for future reference. Leave space in your notes to provide room for additional points or new ideas gleaned from discussion and reading, or what you remember from lecture but did not get down in writing. Reworking the notes into your own words will help you remember the material.
- **Learn and be able to use new terminology.** Every area of science contains a lot of terminology. These new words are often confusing, and so it is important that you can define the new terms that you learn. Some form of flash-cards, with which you can quiz yourself on terms and their definitions is a time-efficient way to learn these new words. However, memorizing terms is only a minimum requirement. Memorization is not a substitute for understanding and being able to use terms to explain biological concepts and processes.
- **Be honest with yourself about your reading and study skills** - Are you ***really*** applying yourself and concentrating while you are studying? Psychological studies have shown that students incorrectly think that they can multi-task effectively, when in fact they are much less efficient and effective when multitasking. Interruptions by texts or visits from friends, TV, games, or music interferes with your brain's ability to focus on, integrate, and remember complex information. If you have already taken course covering plant biology, do not assume that you really understand the material at the level needed in this course.
- **Practice good study habits.** Study frequently during time periods long enough to absorb and comprehend the material, but not so long that you lose concentration and focus – take short breaks if needed. Do not rely on a cramming session the night before an exam. Cramming does not foster long-term understanding that will stick with you. Two hours of studying for each hour of lecture is good rule of thumb. Study with a team. This prevents you from becoming locked in your own mindset and requires that you express your ideas orally. You will not be able to fool yourself about what you know or do not know if you have to explain it to someone else. Oral rehearsal also promotes long-term retention of information.
- **Understand and learn to interpret data, figures, and diagrams.** Many students are intimidated by figures and diagrams, but these usually contain the most important parts of any topic. Do not just concentrate on the text portion of the book or lecture. If you understand figures and diagrams, you will understand both the big-picture and the details.
- **If you are having problems with the material, *get help early*. Do not wait until the end of the course.**