**Biology 271L: Introduction to Plant Biology**

**1 credit hour**

**General Information:**

Lab (BIOL 271L; required) will be held in 140 Wilson Hall at the following times:

Sec 401: T, 12:30-3:20 PM

Sec 402: W, 12:30-3:20 PM

Lab Instructor: Andrew Willoughby

Email: awillow@live.unc.edu

Office: GSB 4144

**Target audience:**

Biology majors or non-majors who have taken introductory biology and require a course with a lab, and ideally who are interested in the diversity of life (which includes plants)**.** Second-semester freshmen through seniors are eligible.

**Nature and Objectives of this laboratory:** Labs are designed to use fresh and prepared plants to investigate, using hypothesis testing, experimentation and observation, 1) aspects of plant structural organization and function, 2) plant variation and adaptations to different environments; 3) how plants are affected by environmental variables and 4) how to identify and or recognize plants in our environment, in order to illustrate topics covered in lecture. Labs usually occur after the topic is presented in lecture. To best prepare for lab activities, **students should read lab guide BEFORE the laboratory itself** and prepare by referring to text or notes about that particular topic. Students will work singly or in groups to achieve the objectives of each laboratory exercise.

Using these goals, you will be able to do the following:

1. create hypotheses in relation to the topic of the lab or based on general biological principles,
2. collect data, either by observation or experimentation,
3. analyze it and report on data and hypothesis testing. Reports may be oral or in writing. Data may be documented as charts, graphs, drawings or photos.

**LABORATORY SCHEDULE** \* indicates you should be prepared to go outdoors, weather permitting; Lab Guide is a Course Pack to be purchased at Student Stores. Note: Supplemental handouts will be posted on Sakai to facilitate lab and should be downloaded prior to lab.

Jan 14, 15— Arboretum walk- introduction to plants and plant parts\* **(Turn in Plant Definitions – Quiz Grade)**

Jan 21, 22— Plant Cells

Jan 28, 29— Seeds and Seedlings

Feb. 4, 5— Winter botany- how to recognize plants even in the winter time\*

Feb 11, 12— Roots and Shoots

Feb 18, 19— Leaves, Inflorescences and Flowers **(Veg. 1)**

Feb 25, 26— Secondary Tissues, Herbarium tour **(Veg. 2)-** what is an herbarium, how is it important to science and society?

Mar 3, 4— Experiments in Water transport, start rooting experiments in Growth and Propagation lab **(Veg. 3)** Includes establishing hypotheses. experimentation, assessing results and tying back to broader issues

Mar. 10, 11— Spring Break – NO LAB

Mar 17, 18— Experiments in Growth and Propagation **(Veg. 4)**

Mar 24, 25— Botanical Garden- introduction to vegetation types in North Carolina; plant

families, pollination adaptations

Mar 31, Apr 1—Bryophytes and Ferns\* **(Veg. 5)**

Apr 7, 8—Gymnosperms\* **(Veg. 6)** some hypothesis testing etc, relevance to society

Apr , 14, 15— Angiosperms (Flowers & Fruits)some hypothesis testing etc, relevance to society **(Final exam)**

Apr 21, 22— Assess results of propagation labs; field trip/treasure hunt\*

**(Turn in results of Growth and Propagation Lab -Quiz grade)**

**Grading**

A quiz may be given any lab day covering content from the previous lab and background or rational for the current lab. Lab assignments may also be collected the following lab session as a quiz grade, the first of these will be the definitions assigned January 9th due January 14-15. These will be worth 80% of the lab grade, and the lowest quiz score will be dropped. **The Honor Code pledge will be a part of each quiz/exam.**

Satisfactory completion of student presentations (Vegetation Types\*) will be worth 5% of the lab grade. Questions derived from these presentations will be on quizzes, so pay attention!

This course will have a cumulative final exam during class April 14-15 which will be worth 15% of the lab grade.

*\*VEGETATION TYPES* (5 pts)

Groups of 2-3 students will present on a vegetation/plant community type. A sign-up sheet will be made available at the beginning of class, January 21-22 and finalized by January 27-28. As a group, pick a vegetation/plant community type of interest and compose a MS Powerpoint presentation (ca. 10 min max) addressing the following four criteria:

1) Geographic distribution (1pts)

2) Associated plants, climate, soils, topography (2pts)

3) At least three interesting aspects (e.g., rare plants, economic value, conservation issues) (1pts)

4) Presentation length and formatting (1pts)

Students are encouraged not to miss a lab; formal excuses for illness or sport-related trips are accepted (for the latter, preferably in advance) and a makeup lab or exercise will be scheduled. If you know that you will need to miss a lab in advance for the above reasons, please contact me and I will allow you to attend the alternate lab for that week. There is no make-up for missing a quiz.

Students are urged to make drawings of plant parts or structures, particularly anatomical, as this is the VERY BEST WAY to engage and learn them!

Materials and quiz grades will be posted on Sakai.

“The instructor reserves to right to make changes to the syllabus, including project due dates and test dates (excluding the officially scheduled final examination), when unforeseen circumstances occur. These changes will be announced as early as possible so that students can adjust their schedules.”

**Resources:**

If you wish to meet with Dr. Gensel or the TA, **please make an appointment**; we are happy to arrange a time! Course materials will be either posted on Sakai or provided in class.

The Department of Biology values the perspectives of individuals from all backgrounds reflecting the diversity of our students. We broadly define diversity to include race, gender identity, national origin, ethnicity, religion, social class, age, sexual orientation, political background, and physical and learning ability. We strive to make this classroom and this department an inclusive space for all students.

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| **Accessibility Resources** | UNC-Chapel Hill facilitates the implementation of reasonable accommodations for students with learning disabilities, physical disabilities, mental health struggles, chronic medical conditions, temporary disability, or pregnancy complications, all of which can impair student success. See the ARS website for contact and registration information: <https://ars.unc.edu/about-ars/contact-us> |
| **Attendance Policy** | No right or privilege exists that permits a student to be absent from any class meetings, except for these University Approved Absences:   1. Authorized University activities 2. Disability/religious observance/pregnancy, as required by law and approved by [Accessibility Resources and Service](https://ars.unc.edu/) and/or the [Equal Opportunity and Compliance Office](https://eoc.unc.edu/what-we-do/accommodations/) (EOC)   Significant health condition and/or personal/family emergency as approved by the [Office of the Dean of Students](https://odos.unc.edu/), [Gender Violence Service Coordinators,](https://womenscenter.unc.edu/resources/gender-violence-services/) and/or the [Equal Opportunity and Compliance Office](https://eoc.unc.edu/what-we-do/accommodations/) (EOC).  Other necessary absences, such as job or graduate school interviews: contact the instructor to arrange for a make-up - this applies to exams only, not quizzes |
| **University Testing Center** | The College of Arts and Sciences provides a secure, proctored environment in which exams can be taken. The center works with instructors to proctor exams for their undergraduate students who are not registered with ARS and who do not need testing accommodations as provided by ARS. In other words, the Center provides a proctored testing environment for students who are unable to take an exam at the normally scheduled time (with pre-arrangement by your instructor). For more information, visit <http://testingcenter.web.unc.edu/>. |
| **Counseling and Psychological Services** | CAPS is strongly committed to addressing the mental health needs of a diverse student body through timely access to consultation and connection to clinically appropriate services, whether for short or long-term needs. Go to their website: <https://caps.unc.edu/> or visit their facilities on the third floor of the Campus Health Services building for a walk-in evaluation to learn more. |

**Honor Code Statement:**

Students are bound by the Honor Code in taking exams in in written work. The Honor Code of the University is in effect at all times, and the submission of work signifies understanding and acceptance of those requirements. Plagiarism will not be tolerated. Please consult with me if you have any questions about the honor code.

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