**BIOL 3520** **Fall 2025**

**Instructor: Phone:**

**Office: Email:**

**Office Hours:**

**All Laboratory Information:**

You will need to go to the bookstore and get access to the LabFlow software.

Announcements will be on canvas.

**Course Description:**

BIOL 3520 Cell Biology Laboratory is a practical course designed to introduce the basic techniques, skills, and analytical rationales that drive research in cell biology. The activities practiced in the laboratory draw on theoretical principles of cell biology, and thus it is required that the lecture component of the series, BIOL 3510 Cell Biology, be taken prior to or concurrent with enrollment in the lab. The main goal of this course is to introduce the student to current techniques and technologies used to resolve fundamental questions in Cell Biology, while reinforcing key concepts in the discipline. Each lab will show that individual techniques are simply steps in a longer investigatory process for the understanding of cellular function. This laboratory will accurately reflect what goes on in a contemporary cell biology laboratory by having the students become active participants in the laboratory process.

**Objectives:**

1. Become familiar with analytical techniques in cell biology research, including Micropipetting, Spectrophotometry, Protein Analysis, DNA analysis, techniques and instrumentation used in these areas.

2. Understand how techniques may be applied experimentally to answer questions in cell biology, and the strengths and limitations of such applications.

3. Improve data collection and recording skills; and

4. Practice interpreting experimental results.

**Course Policy and Grading:**

Grades in this course are based on the following, using: A (900 – 1000 pts), B (800 – 899 pts), C (700 – 799 pts), D (600 – 699 pts), F (< 600)

Attendance is critical. For you to gain the most knowledge from this course, every class must be attended. You need to show up ahead of time, prepared for the lab and be ready to begin on time every time.

**For those students who miss an exam, you will need to provide documentation for the reason missed within a week of the exam to the Dean of Students. Students then will have the opportunity to take the missed exam as an Oral make-up exam, 1hrs 10 min. only. The Oral make-up exam will be administered within a week via appointment with the TA. There are no makeup labs and no makeup in-lab assessments.**

 a.) Midterm Exam 300 pts

 b.) Final Exam 300 pts

 c.) 5 Lab Reports 80 pts each

Total of 1000 Points

**There is NO EXTRA CREDIT!**

**Lab Reports are due before you leave at the end of class.**

**If you drop the lecture during the semester, you will not be allowed to stay in the lab. Being concurrently enrolled in the lecture or having taken the lecture in a previous semester are departmental requirements and will be strictly adhered to. No Exceptions, unless the department makes official changes.**

**Evaluation**

The final grade will be based on a Mid-Term, Final and lab reports. All information gathered during the laboratory will be used to determine your understanding of the concepts and where gaps exist in comprehension of the material. The Mid-Term will include everything covered in lab from the first day of class until the week of the Mid-Term and the Final will be comprehensive covering all material learned during the semester.

It is understood that you will keep a comprehensive lab notebook. The notebook should include but is not limited to the following: protocols, data collected during the experiment, your name, section, Lab Instructor, Title of the Lab, abstract, introduction, materials and methods, results, discussion and conclusion sections. All this information will be useful in studying for both the Mid-Term and Final exams. **Notebooks will be used to guide you through your laboratory exercise. You should have read the laboratory posted and prepared your notebook for use in the laboratory.**

**SAFETY**

All safety guidelines must be adhered to, and any directives given by the instructor must be followed. In addition to posing a risk of injury, failure to comply with these provisions will negatively affect the student’s lab performance score and in some situations will result in removal from the classroom. Any safety concerns should be brought to the attention of the instructor.

**Personal Protective Equipment (PPE) is “REQUIRED” once you enter the Laboratory. If you do not have the proper PPE in the lab you will be asked to leave the laboratory area to obtain one.**

**PPE: Laboratory coat that is below the knees, safety goggles, laboratory gloves.**

**Items you will not be allowed to wear to the laboratory: shorts, open toed shoes, and sandals.**

**No food or drinks are allowed in the lab at any time.**

Students in the Department of Biology are required to use proper safety procedures and guidelines. While working in laboratory sessions, students are expected and required to identify and properly use safety guidelines in all activities requiring lifting, climbing, walking on slippery surfaces, using equipment and tools, handling chemical solutions and hot and cold products. Students should be aware that the University of North Texas is not liable for injuries incurred while students are participating in class activities. All students are encouraged to secure adequate insurance coverage in the event of accidental injury. Students who do not have insurance coverage should consider obtaining Student Health Insurance for this insurance program. Brochures for this insurance are available in the UNT Health and Wellness Center on campus. Students who are injured during class activities may seek medical attention at the UNT Health and Wellness Center at rates that are reduced compared to other medical facilities. If you have an insurance plan other than Student Health Insurance at UNT, please be sure that your plan covers treatment at this facility. If you choose not to go to the UNT Health and Wellness Center, you may be transported to an emergency room at a local hospital. You are responsible for all expenses incurred.

**Attendance Special Cases**

Students are expected to attend class meetings regularly. It is important that you communicate with the TA and your laboratory group prior to being absent, so you, the TA, and your laboratory group can discuss and mitigate the impact of the absence on your attainment of course learning goals.

**Religious Holy Days:** In accordance with state law, a Student absent due to the observance of a religious holiday may take examinations or complete assignments scheduled for the days missed, including those missed for travel, within a reasonable time after the absence. Students should notify the instructor in each course of the date of the anticipated absence as early in the semester as possible. Only holidays or holy days observed by a religion whose place of worship is exempt from property taxation under Section 11.20 of the Tax Code may be included. A student who is excused under this provision may not be penalized for the absence, but the instructor may appropriately respond if the student fails satisfactorily to complete the assignment or examination. A student who misses for the observance of a religious holy day should **inform the instructor by the 12th class day of the semester that they would**

**not be present.** You will not be counted absent for that day but due to the nature of a laboratory situation there are no makeup laboratories.

**Participation in University Sponsored Activities:** such as athletics, debate, musical organizations, AFROTC, class field trips, etc., must be authorized by the student's academic dean. Within three days after the absence, students must obtain authorized absence cards from the Dean of Students for presentation to their instructors.

**Absence for Military Service:** In accordance with section 51.9111 of the Texas Education Code, a student is excused from attending classes or engaging in other required activities, including exams, if he or she is called to active military service of a reasonably brief duration. The maximum time for which the student may be excused has been defined by the Texas Higher Education Coordinating Board as “no more than 25 percent of the total number of class meetings or the contact hour equivalent (not including the final examination period) for the specific course or courses in which the student is currently enrolled at the beginning of the period of active military service.” The student will be allowed a reasonable time after the absence to complete assignments and take exams. Policies affecting students who withdraw from the University for Military Service are given in the Withdrawal section.

**ACADEMIC CONDUCT**

The Department of Biology takes academic integrity very seriously. Academic dishonesty includes not only cheating on exams, but also plagiarism and collusion. Students are warned to avoid collusion, meaning inappropriate collaboration on assigned homework and lab reports. These assignments are meant to reflect your personal efforts. Copying material from another student’s lab is cheating and will be dealt with accordingly. If you are uncertain of what constitutes academic dishonesty, you need to clarify your concerns with the instructor.

**Any incidents or suspicions of academic dishonesty, including plagiarism and other forms of cheating, will be dealt with according to university policy. Sanctions may range from receiving a zero on the assignment to expulsion from the university. The official policies of the university, including a description of actions that constitute academic misconduct, can be found at http://www.unt.edu/csrr/student\_conduct/index.html and through sidebar links therein.**

**PAYMENT STATEMENT**

To attend class, you must be paid in full. Check your online schedule daily through the 12th day of classes to make sure that you are not dropped from any class for non‐payment. You may be unaware of a drop that occurred for an unexpected reason, such as unapplied financial aid or schedule change fees. The Department of Biology does not reinstate anyone after the 12th class day regardless of cause. It is your

responsibility to confirm that all your payments are made and that you are eligible to attend as of 12th class day.

**DISABILITY ACCOMMODATION, INCLUDING CHRONIC ILLNESS**

The Department of Biological Sciences, in cooperation with the Office of Disability Accommodations (ODA), complies with Section 504 of the Americans with Disabilities Act in making reasonable accommodations for qualified students. Official written requests for accommodation should be submitted through the ODA as soon as possible so that necessary arrangements can be made. As a matter of equity, no accommodation or grade adjustment can be made retroactively, so it is imperative to communicate any needs to the instructor in a timely manner. Note that any considerations for chronic (ongoing, recurring, or episodic) illnesses must also be coordinated through the ODA.

**ASSIGNMENT OF THE GRADE OF INCOMPLETE**

As per university policy, the assignment of a grade of Incomplete (I) will not be considered unless the following conditions are met: 1) official and verifiable documentation is provided explicitly describing the justification for the incomplete; 2) the justification is deemed to be of sufficient and acceptable cause; 3) it is determined that the cause will reasonably prevent the student from making up the necessary coursework within the normal term; 4) the deadline for dropping the course has passed; and 5) the student is currently passing the course. Requests for a grade of Incomplete must be initiated by the student, and the necessary contractual paperwork must be completed before such grade can be issued. Any deficiencies in coursework incurred prior to the drop deadline cannot be remediated through the incomplete process. Please note that an incomplete grade does not provide the student an opportunity to retake the course, and also that the assignment of this grade rarely benefits the student. In fact, this option frequently proves detrimental to the student, and should be considered with caution.

**COMMUNICATION**

Misunderstandings can best be avoided through active communication. Whenever a situation arises, it should be addressed promptly. **It is the student’s responsibility** to discuss any issues with the instructor or laboratory supervisor before they become a larger problem, so that reasonable solutions can be found. Never hesitate to let your instructor know what’s going on.

**Laboratory Schedule\* – BIOL 3520 Fall 2025**

 The Week Off: Coverage Area Assignments Due

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| --- | --- | --- |
| Aug. 18th, 2025 | Introduction to the Course and Laboratory Safety |  |
| Aug. 25th 2025 | Care and use of a Pipette and Practice Exercise | Lab Report 1 Due |
| Sept. 1st 2025 | Labor Day - No Lab Scheduled this Week |  |
| Sept. 8th 2025 | Determination of Protein Concentration (Spectrophotometry) | Lab Report 2 Due |
| Sept 15th 2025 | ELISA Immunodetection | Lab Report 3 Due |
| Sept 22nd 2025 | Protein Extraction and SDS PAGE | Turn in initial data |
| Sept. 29th 2025 | Imaging Gels, Analysis and Interpretation | Turn in initial data |
| Oct.6th 2025 | Midterm |  |
| Oct 13th 2025 | Analysis and Interpretation  | Lab Report 4 Due |
| Oct. 20th 2025 | DNA Extraction & PCR Amplification | Turn in initial data |
| Oct. 27 2025 | DNA Gel Electrophoresis | Turn in initial data |
| Nov. 3rd 2025 | Analysis and Interpretation  | Lab Report 5 Due |
| Nov. 10th 2025 | Review for final |  |
| Nov. 17th 2025 | Lab Final |  |
| Nov. 24th 2025 | Thanksgiving Holidays |  |
| Dec. 1st, 2025 | No Laboratory Scheduled |  |
| Dec 8th 2025 | No Laboratory Scheduled |  |

\*Schedule subject to change. In case of university closure, labs will be shifted to compensate.