BI230 – Biological Sciences I

Fall 2025, 4 credits

Course Syllabus

Class meetings

Lecture **M1: TR 11:20 AM – 12:25 PM, CSA 242**

Lab **M1&2: M & T - 1:00 PM - 3:50 PM, CSA 139**
(CSA=The Center for Sciences & Agriculture)

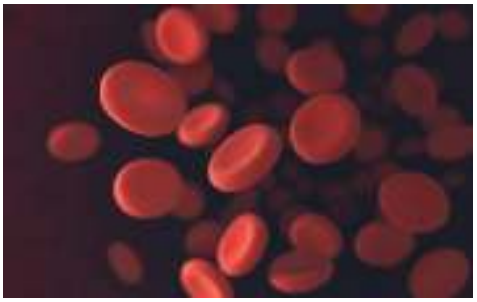
Instructor/ Professor:

Dr. Oladapo F. Fagbohun
Email: oladapo.fagbohun@wilmington.edu
Office: Center for Sciences & Agriculture Room 114
Office Phone: 937.481.2431
Office Hours: Tues and Thurs: 8:00 AM-9:00 AM; or by appointment ON Mon, Wed, and Fri

Course Description

Course Catalog Description
This course covers everything from the relationship between cellular, organelle, and molecular structure to the basic activities that all living things undertake. Topics covered include basic biochemistry, membrane and organelle structure and function, cellular reproduction, enzymes and metabolism, and the central dogma. Students learn about the nature of science by undertaking open-ended research projects using modern investigative laboratory techniques, by reading and analyzing the work of other scientists, and by preparing both written and oral presentations of their project findings. Laboratory. 4 credit hours.

Learning Goals and Objectives



By the end of this course:

1. Students will demonstrate an understanding of science as a way of knowing about the physical world and recognize the types of questions that science, by its very nature, can and cannot answer.
2. Students will demonstrate an understanding of the scientific method by generating hypotheses, analyzing raw data after conducting an experiment, drawing appropriate conclusions, and through oral and written communication of the experimental process.
3. Students will demonstrate knowledge of concepts in cell and molecular biology. This will be demonstrated by student performance on written examinations. Precise learning objectives for examinations will be provided.

4. Students will demonstrate a working vocabulary in cell and molecular biology by recognizing definitions (multiple choice and matching questions), recalling definitions (writing definitions), and using terms appropriately in essays.
5. Students will demonstrate the ability to answer a scientific question by designing an experiment, performing the experiment, analyzing results, drawing appropriate conclusions, and effectively communicating this process. Achievement of this goal will be the production of a written report in the format of a scientific paper and a presentation.

Important principle: Please be respectful!!!

- Try not to disrupt or distract others in class
- Do your work!
- Do not use your electronic devices for anything not related to class during lectures. This behavior is rude and very disrespectful, both to the instructor and to the other students who are here to learn

ChatGPT: Academic integrity principle!!!

- All work (essays, test answers, homework answers, etc.) that you submit in this course must be originally produced by you and not by artificial intelligence,
- All submitted works will be compared against AI detectors
- Failure to comply with this policy will result in penalties for academic dishonesty!!!

Required Resources

Blackboard

The Blackboard Learning Management System will be used extensively in this class. Be sure to check it regularly for updates and announcements, as well as details for specific assignments and additional readings.

Supplemental Resources:

- Urray, Lisa A., Urry, Jane B. Reece, Michael L. Cain, Steven A. Wasserman, Peter V. Minorsky, and Robert B. Jackson. 2011. Campbell Biology 11th Edition. Pearson. NY, NY. ISBN-13: 9780135188743.

- Knisely, Karin. 2017. A student handbook for writing in biology, 5th edition. Sinauer Associates, Inc., Sunderland, MA.

Lectures

Lectures will include more details about certain topics and up-to-date information on new findings in the field of biological sciences. If you want to be successful in this course, you should show up to class and plan to take your notes as well.

Weekly Laboratory Section

The laboratory exercise component of this course will allow you to gain further experience with methods used in biological sciences.

General Information and Evaluation

Important course announcements will be made in class and posted on the WC Blackboard course page. It is expected that you will check your WC email *at least once every 24 hours during the semester on workdays* (M-F).

A minimum of **two hours** of student out-of-class work is expected for each hour of in-class time.

Course Assessment

Grading:

Item	Point Value
Exam 1	100
Exam 2	100
Exam 3	100
Exam 4	100
Online lab exam	75
Lab	325 (25 pts/lab)
Lecture Assignments	70
Finals Week Group Discussion	30
Attendance and Participation	100
Total	1000 pts

Assignments turned in late for any reason will have points deducted from them. The more days late, the higher the deduction. Late assignments will have points deducted from them according to the following schedule (no exceptions without a valid excuse):

Days Late	Percent of Grade Deducted
1Day @ 1 minute after stated deadline	10%
Day 2	20%
Day 3	30%
Day 4	40%
Day 5	50%
Day 6	60%
Day 7	70%
Day 8	80%

Day 9	90%
Day 10	100%

Exams (40%)

There will be 4 exams. The dates for each exam are listed on the Class Schedule. The exams will cover the material from lectures, readings, and lab sessions. Each exam will primarily cover the material from the previous exam. Some of the questions will be fact-based questions, while some of the questions will be more difficult and ask you to integrate and apply concepts from lectures, labs, and readings. The exams will be multiple-choice, matching, and true/false questions. The exams will be administered in person during the lecture. Attendance on examination days is absolutely required and no makeup exams will be allowed unless the student has contacted either the instructor or the Office of Academic Affairs prior to the time of the exam.

Online lab exam (7.5%)

The online lab exam will cover the material from all the lab sessions and exercises. Some of the questions will be fact-based questions, while some of the questions will be more difficult and ask you to integrate and apply concepts. The exam will be multiple-choice and true/false questions and short answers. The exams will be administered on Blackboard, will be open-note, and you will have one week to complete them.

Laboratory Exercises (32.5%)

Each week, you will be assigned a laboratory exercise(s). These exercises will be related to lecture and reading material. The exercise(s) will be in your laboratory manual or provided by your lab instructor. You will complete and turn in these exercises during your laboratory section unless another due date is indicated by your instructor for a specific laboratory exercise. Unless informed otherwise by the instructor, you will need to bring your laboratory manual with you to every laboratory section to the lab to fill in the exercise during the lab period.

Lab sessions/exercises are worth a total of 325 points (25 points for each lab). **To earn points for a lab session, you must attend the lab, participate in the lab, and turn in any assignments associated with the lab.** Students who have an excused absence from lab must make up the laboratory exercise to receive points for that lab.

Attendance at the entire lab period is mandatory. Attendance will be taken at Laboratory sessions. See the current student handbook for the college's Attendance Policy, especially as it pertains to excused absences. Attendance at laboratory sessions will be recorded and students who fail to fully participate in the laboratory portion of the course risk a deduction from their final points total. Promptness is very important because announcements about each lab assignment will be given at the start of the lab period. 3 points will be taken off of your lab grade for tardiness of up to 30 minutes. After 30 minutes, you will lose 10 points, and it will be considered an absence. Even if you know you are going to be very late, however, you should still show up to receive the data necessary to do your lab assignments.

Students are expected to actively participate in laboratory activities and will be graded on their level of participation and preparation for each class. Students are expected to clean their laboratory area and return laboratory materials to the appropriate location prior to leaving the lab. Points may be deducted from participation points for inadequate participation or improper classroom etiquette.

Lecture Assignments (7%)

During the semester, you will be assigned 5 lecture assignments. Lecture assignments will be posted to Blackboard with instructions and due dates.

Finals Week Group Discussions (3%)

On Tuesday, Dec 5 (Finals week), students will participate in a series of group discussions regarding current issues and concerns in human biology. Students will be provided with background information on the topic and will also incorporate knowledge gained throughout the course in these discussions. Attendance is required to earn points for this activity.

Attendance and Participation (10%)

Attendance will be recorded and students who regularly skip class should not expect to do well in the course. Attendance as well as participation is 10% of the grade. Attendance will be taken at every lecture session and points will be given for attending lectures.

Students are expected to actively participate in lecture activities and will be graded on their level of participation and preparation for each class. Students are expected to exhibit appropriate classroom etiquette, including, but not limited to, listening attentively when the professor or another student is speaking, arriving to class on time, and turning off cell phones.

See the current Student Handbook for the college Attendance Policy especially as it pertains to excused absences. No makeup exams will be allowed unless the student has contacted either the instructor and/or the Office of Academic Affairs prior to the time of the exam. All excused absences must be documented. The College accepts these four categories of excused absences:

1) Activities in which the student serves as an official representative of the College (e.g., musical performances, athletic contests, field trips)
2) Personal illness, with documentation by the College nurse or a physician
3) Family or personal emergencies
4) When severe weather makes travel to campus dangerous

Promptness is very important because announcements will be given at the start of the lecture period. 50% of the attendance grade will be deducted if you are more than 15 minutes late to lecture. After 30 minutes, it will be considered an absence. Even if you know you are going to be very late, however, you should still show up to receive the information necessary to do your lab assignments and exams.

Students are responsible for getting information from other students or from the professor on what material they have missed from a lecture, whether the absence is excused or unexcused.

Course Grades

Points earned will be added and grades will be assigned based on the scale below. Do not expect any "curving" of grades in this course.

Letter grade and points:	Meaning of grade (from WC Handbook):
A = 1000-925, A- = 924-900	Range of outstanding achievement
B+ = 899-865, B = 864-825, B- = 824-800	Range of good achievement

C+ = 799-765, C = 764-725, C- = 724-700	Range of average achievement
D+ = 699-665, D = 664-625, D- = 624-600	Range of below average achievement
F = < 600	Inadequate achievements

Plus/Minus grading will be used in this course. Guaranteed grade cutoffs are as follows:
100-92.5%: A; 92.4-90.0%: A-; 89.9-86.5%: B+; 86.4-82.5%: B, 82.4-80.0%: B-.

Cutoffs for grades in the C and D ranges follow the pattern established for the grades in the B range. Final grade cutoff points are sometimes lowered to better fit the grade distribution curve. Final letter grade cutoffs will be at the discretion of the instructor.

From the Wilmington College Faculty Handbook: “It is the policy of Wilmington College to strive for fairness in grading and avoid grade inflation. Faculty are encouraged to regard a "C-" as a satisfactory grade, which means the student is meeting College standards and will treat it as such in talking with students unless otherwise noted in the College Catalog. The grade "A", on the other hand, should mean outstanding achievement, with a grade of "B" in between. The grade "D" represents minimally acceptable achievement, and the grade "F" indicates failure.”

Course Policies

Academic Misconduct

Students with academic integrity violations may not be eligible for academic awards and honors (i.e., Academic Honors, Dean’s List/Merit List, Green Key Honor Society, Quaker Impact Award, and other Honorary Societies). See the current Student Handbook for the college's Academic Integrity policies as they pertain to examinations, plagiarism, classroom behavior, and the process for handling academic misconduct charges. Plagiarism is discussed further below.

YOU WILL ONLY RECEIVE GRADES FOR INDEPENDENT AND ORIGINAL WORK. Students are expected to understand and adhere to the Academic Integrity Policy in the Student Handbook and will be reported to The Office of Academic Affairs if a violation occurs.

Americans with Disabilities Act

In accordance with ADA, Wilmington College provides reasonable accommodation to students with physical and mental disabilities. If you have a documented disability that requires accommodation, contact the Director of Accessibility and Disability Services, Amber Walters, at (937) 481 – 2444 in the Robinson Communication Center (room 111) during business hours and the instructor by the end of the first class. The email address for Accessibility and Disability Services is accessibility@wilmington.edu

Copyright Policy

This course may contain copyright-protected materials such as audio or video clips, images, text materials, etc. These items are being used with regard to the Fair Use doctrine in order to enhance the learning environment. Please do not copy, duplicate, download, or distribute these items. The use of these materials is strictly reserved

for this online classroom environment and for your use only. All copyright materials are credited to the copyright holder.

Plagiarism Policy

Plagiarism is defined as the representation of another's words, ideas, concepts, research or creative production without proper attribution whether intentional or unintentional. It is the student's responsibility to be informed about what constitutes plagiarism. Plagiarism can occur in the submission of one's own work or in work submitted by a group.

Examples of plagiarism include the following:

- The submission of a paper not one's own, including turning in a paper that has been purchased from a commercial research firm or obtained from the internet
- Copying word for word information without quotation marks
- Paraphrasing information (that is, the use of one's own words with only minor changes to the original)
- Use of information not considered general knowledge without proper citation
- Listing of misleading or false sources on a reference page
- The use of a paper or project for one course that was previously submitted for another course, either at Wilmington or at any other institution

Plagiarism is a serious academic offense and carries serious academic consequences. Violations will be recorded by the Associate Vice President of Academic Affairs at the Main Campus and Vice President of External Programs at the Cincinnati Branch Campus.

When an instructor discovers plagiarism, the instructor will first consult with the Associate Vice President of Academic Affairs if a main campus student, or the Vice President for External Programs if a branch campus student, in order to determine if the student is a first-time offender. For first offenses, the instructor has the ability to determine the penalty for the offense. Students with academic integrity violations may not be eligible for academic awards and honors (i.e., Academic Honors, Dean's List/Merit List, Green Key Honor Society, Quaker Impact Award, and other Honorary Societies). For a second offense or more, the Associate Vice President of Academic Affairs at the Main Campus or the Vice President for External Programs for students at the branch campus, will report the offense to the academic standards and appeal committee and gather evidence for a hearing with the student. It is possible that the student will receive a substantial reduction in grade for the course or will fail the course. Multiple instances could even lead to suspension or expulsion from Wilmington College.

There are many universities, colleges, and private websites students may consult about how to avoid plagiarism. Sites with particularly helpful suggestions can be found at:

http://owl.english.purdue.edu/owl/resource/589/01/
http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml
http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize
http://www.princeton.edu/pr/pub/integrity/08/intro/index.htm
http://www.plagiarism.org/plag_article_preventing_plagiarism_when_writing.html
http://citationmachine.net/index2.php

All work in this course should be independent unless specifically stated otherwise. Do not share laboratory reports or written information to avoid plagiarism. The best way for you to demonstrate mastery of the material is for you to write your own words.

Third-Party Software and FERPA Policy

During this course you might have the opportunity to use public online services and/or software applications sometimes called third-party software such as a blog or wiki. While some of these could be required assignments, you need not make any personally identifying information on a public site. Do not post or provide any private information about yourself or your classmates. Where appropriate you may use a pseudonym or nickname. Some written assignments posted publicly may require personal reflection/comments, but the assignments will not require you to disclose any personally identity-sensitive information. If you have any concerns about this, please contact your instructor.

Covid Precautions

In the event that the college is required to transition to online learning at any point during the semester, the course will move to an online synchronous format for both lecture and lab.

If we must shift to virtual instruction:

- The lectures will be taught synchronously at the regularly scheduled class time via Zoom
- Timed exams and quizzes will be given on Blackboard
- Any assignments will be assigned and submitted through Blackboard
- Alternative virtual lab activities will be assigned through Blackboard if in-person labs cannot be safely conducted

**This syllabus is subject to change at the discretion of the instructor. **

Class Schedule

Week	Date	Lecture Topic	Lab
1	19-Aug 21-Aug	Introduction to Course Scientific Inquiry Scientific Inquiry	No Lab
2	26-Aug 28-Aug	The chemical context of life (Water and Life)	Lab 1 – No in-person meeting. Read scientific method and lab protocols "How Science Works"
3	2-Sept	Carbon and the Molecular Diversity of Life	Lab 2 – Cell Culture Basic Lab Techniques: Micropipette,

	4-Sept	Carbon and the Molecular Diversity of Life	preparing of stock solutions and serial dilutions
		Structure and Function of Large Biomolecules	
4	9-Sept	Structure and Function of Large Biomolecules	Lab 3 – Red Dye #40 Lab Activity
	11-Sept	Structure and Function of Large Biomolecules	
5	**16-Sept**	**Exam 1**	Lab 4 – Standard Curve, Excel Tutorial, and Writing a Lab Report
	18-Sept	A Tour of the Cell	
		A Tour of the Cell	
6	23-Sept	An Introduction to Metabolism	Lab 5 – Cellular Fractionation
	25-Sept	An Introduction to Metabolism	
		An Introduction to Metabolism	
7	30-Sept	Cellular Respiration and Fermentation	Lab 6 – Respiration Lab
	2-Oct	Cellular Respiration and Fermentation	
		Photosynthesis	
8	7-Oct		Lab 7 – Onion Root
	9-Oct	Photosynthesis	
		Cell Communication	
9	**13-Oct**	Fall Break	**FALL BREAK**
	14-Oct	Exam 2 (Writing Exam)	
	16-Oct	**The Cell Cycle**	
10	21-Oct	Meiosis and Sexual Life Cycles	Lab 8 – Human Variation and Heritable Traits
	23-Oct	Meiosis and Sexual Life Cycles	
11	28-Oct	Mendel and the Gene Idea	Lab 9 – Yeast/UV mutagenesis Day 1
	30-Oct	Mendel and the Gene Idea	
		The Chromosomal Basis of Inheritance	
12	4-Nov	The Chromosomal Basis of Inheritance	Lab 10 – Yeast/UV mutagenesis Day 2
	6-Nov	The Molecular Basis of Inheritance	
		The Molecular Basis of Inheritance	
13	**11-Nov**	**Exam 3**	Lab 11 - Yeast/UV mutagenesis Day 3
	13-Nov	Gene Expression: From Gene to Protein	
		Gene Expression: From Gene to Protein	
14	18-Nov	Regulation of Gene Expression	Lab 12 – Yeast/UV experiment results
	20-Nov	Regulation of Gene Expression	

15	25-Nov	Viruses	**Take-home Lab Exam**
	27-Nov	Thanksgiving Holiday (No Class)	
16	2-Dec	DNA Tools and Biotechnology & Genomes and their Evolution	*No labs this week*
	4- Dec	**Study Day**	

Please note: Final Exam (Exam 4) during the normal school exam schedule