

**BIO 4110 – Biomedical Technology and Molecular Biology
Fall 2020**

**Instructor: Dr. Lori Pile (pronouns: she/her)
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- Class meets: Lecture-
1:00 to 2:15 Tuesday and Thursday – remote via Zoom

Discussion/Writing Workshop–
10:30 to 11:20 Thursday – remote via Zoom – Anindita Mitra
11:30 to 12:20 Thursday – remote via Zoom – Anindita Mitra
- Office hours: by appointment
- Class Web site: <http://canvas.wayne.edu>
Lecture notes and additional assigned readings are regularly posted. Please check this site often.
- 4 credits (lecture, in class group discussion and problem solving)

Prerequisites: The prerequisite courses for BIO 4110 are BIO 3070 and BIO 3100. In addition, because this is the advanced writing intensive for majors, it is strongly recommend that you successfully complete your intermediate writing requirement before taking this course.

Learning Outcomes: Student knowledge will be assessed through quizzes, assignments and exams. Upon successful completion of this course students will

- demonstrate a thorough understanding of the general principles of molecular biology including general flow of genetic information, structure function relationships and systems using genome wide approaches and molecular biological analyses.
- apply quantitative reasoning skills through experimental design and data analysis.
- have an understanding of the evolutionary framework for heredity through investigation of genetic diversity and genome evolution.
- be an informed member of society through understanding ethical implications of genetic data.

As this course fulfills the Writing Intensive Course requirement for the Biology major, in their own written texts, students will demonstrate their mastery of written communication in the discipline of molecular biology. Specifically, they will:

- demonstrate the ability to use general conceptual statements supported by evidence appropriate to the discipline.
- demonstrate comprehension of discipline-appropriate material (including scholarly articles and lab experiments) by using discipline-suitable examples, level of detail and organization.
- exhibit critical thinking by integrating and synthesizing multiple distinct outside sources.
- produce a conclusion that effectively interprets previously presented evidence and key points, adds new insights, and results in an integrated whole.
- produce focused writing that exhibits consistency, flow, correct style formatting with correct grammar.

Text: Fundamental Molecular Biology, Second Ed., Lizabeth A. Allison

Useful Animations: The following websites contain very useful animations on some of the topics that are covered in the course.

<http://www.dnalc.org/resources/animations/>

<http://www.dnai.org/index.htm>

Additional Reading Assignments: PDFs of review and primary literature articles will be posted on Canvas. Please check the website often.

Grading Policy: Grades will be from 0 to 100. Final grades will be calculated using a distribution curve if necessary. After each exam, the class grade distribution will be given.

Grade Scale:	91.6-100	A
	90.0-91.5	A-
	88.5-89.9	B+
	81.6-88.4	B
	80.0-81.5	B-
	78.5-79.9	C+
	71.6-78.4	C
	70.0-71.5	C-
	68.5-69.9	D+
	61.6-68.4	D
	60.0-61.5	D-
	0-59.9	F

Please note: if you are using this course to fulfill the WI requirement for Biology majors, you must receive the grade of C or above.

Writing Intensive: The writing intensive course focuses on learning to read and synthesize primary and review literature in molecular biology and biotechnology. This course does not focus on basic or intermediate writing skills, but these skills are required to successfully complete this course. If you have trouble with sentence and paragraph structure or other writing skills, you are expected to get help outside of this course. The University provides the writing center as a resource. For more information, please go to <http://www.clas.wayne.edu/writing> or call (313) 577-2544.

Grading:

Because of the new format of the course, the grades will be based on a number of different types of assessment. Many of the assignments are low-stakes activities that will be submitted regularly and graded quickly to allow you to see your progress and stay engaged throughout the term. The different types of assignments and exams, along with points available, are described below.

Homework	70
Discussion Quiz	30
SA Assignments	50
TP Assignments	130
Oral Presentation	70
<u>In class Exams</u>	<u>120</u>
Total	470

Homework – 70 pts

Prior to each class, a question set will be posted on Canvas. Students are expected to go through and answer the questions prior to our class meeting. During class we will do group work and go through the answers. A day or so following the class, your written answers will be submitted online for grading. For each assignment, course instructors will check that all questions have been answered, and will specifically grade a selection of the answers.

- 10 points each
- Submitted most weeks on Fridays (dates will be posted on Canvas)
- Include best 7 of 10 possible
- HW 10 is required

Discussion Quiz – 30 pts

During a number of the discussion meetings, there will be a short quiz over the assigned material. You will be notified of the quiz in advance of the meeting. You must be present to be able to take the quiz.

- 5 points each
- Either problem solving, multiple choice or short answer related to reading assignment
- Include best 6 of 8 possible

Short Writing Assignments – 50 pts

There will be a number of short writing assignments. Instructions and submission dates for each will be posted on Canvas.

- 10 points each
- two reflection papers
- Horikoshi et al question set
- CV/resume
- Summary of Fire et al.

In class Exams – 120 pts, 3 @ 40 pts each

Exams will consist of multiple choice, short answer, essay and problem solving questions. The exams will be administered through Canvas during class time on the following dates.

- Lecture Exam I Tuesday, September 29
- Lecture Exam II Tuesday, October 27
- Lecture Exam III Tuesday, November 24

Term Paper Assignments – 130 pts

Detailed instructions regarding the term paper will be provided during a discussion section and posted on Canvas.

- Outline – 10
- Summary of final article – 10
- Rough draft & critique – 10
- Final draft – 100

Oral Presentation – 70 pts

Detailed instructions regarding the oral presentation will be provided during a discussion section and posted on Canvas. You will have the chance to sign up for a presentation slot on one of the following dates: Thursday, December 3, 10, or 17

- Summary of current article – 10
- Critique of news article – 5
- Peer review – 5
- Presentation – 50
 - Slides (20), Presentation (10), Q&A (20)

Assignment and Examination Policies:

- Late policy. All assignments have specific due dates. We have assigned dates to keep you on track with the material. The course information builds throughout the semester, so it is important that you have a good understanding of material from the early part of the course to be able to fully understand material in the latter half. Because we understand that this is a challenging time, we will allow a grace period of two days for any written assignment, no questions asked. If at the end of this period, you are still have difficulty completing the assignment, then you must schedule a meeting with either Dr. Pile or Ms. Mitra to set up a schedule for completion.
- No makeup exams will be given and no exams will be given in advance.
- Anyone caught cheating on an assignment or exam will automatically receive a failing grade for the class and procedures for expulsion of the guilty individual from Wayne State University will be undertaken. Plagiarism is a form of cheating and therefore subject to the same penalty. Please refer to <http://www.plagiarism.org> for information on what constitutes plagiarism and how to avoid it.
- Your written work will be submitted to Unicheck for an evaluation of your ideas and proper use and attribution of sources. As part of this process, you may be required to submit electronic as well as hard copies of your written work, or be given other instructions to follow. By taking this course, you agree that all assignments may undergo this review process and that the assignment may be included as a source document in Unicheck's restricted access database, solely for the purpose of detecting plagiarism in such documents. Any assignment not submitted according to the procedures given by the instructor may be penalized or may not be accepted at all. Because our goal is to help you learn how to not plagiarize, information on how to avoid plagiarism will be provided in class and on Canvas.
- Conflicts regarding the grading of assignments and exams must be resolved within one week of the return date. The item in question must be returned (via email) along with a written statement explaining the concern.

Course Participation: WSU has implemented a policy requiring student participation in courses. A participation verification system is in place. You must attend at least one lecture during the first two weeks of class to fulfill the attendance/participation requirement. If you do not attend, the Registrar will administratively withdraw the student from the relevant class(es) and Student Financial Aid will adjust financial aid accordingly. For additional information, please refer to <http://reg.wayne.edu/gotoclass.php>

General Policy:

- 1) September 15 is the last day to drop the course and retrieve your tuition.
- 2) September 15 is the last day to drop the course without the instructor's signature. Does not appear on record.
- 3) September 16 to November 15, the instructor's signature is required to withdraw from course. One of the following grades will be assigned:
 - WP-withdrawal with a passing grade earned to date
 - WF-withdrawal with a failing grade earned to date
 - WN-withdrawal never attended, or no graded work to date

The grade assigned will be based on the points accumulated to date. Grades will be given using a straight scale, no curve is applied to grades of students withdrawing from the course.

- 4) November 15 is the last day to withdraw from the course. Students are not permitted to withdraw at the end of the semester and no exceptions to this policy will be made.
- 5) If you have a documented disability that requires accommodations, you will need to register with Student Disability Services (SDS) for coordination of your academic accommodations. The Student Disability Services (SDS) office is located at 1600 David Adamany Undergraduate Library in the Student Academic Success Services department. SDS telephone number is 313-577-1851 or 313-577-3365 (TDD only). Once you have your accommodations in place, I will be glad to meet with you over video chat to discuss your special needs. Student Disability Services' mission is to assist the university in creating an accessible community where students with disabilities have an equal opportunity to fully participate in their educational experience at Wayne State University.

Please be aware that a delay in getting SDS accommodation letters for the current semester may hinder the availability or facilitation of those accommodations in a timely manner. Therefore, it is in your best interest to get your accommodation letters as early in the semester as possible.

- 6) In the event of a University closure on the day of an exam, the exam will be given during the next regularly schedule lecture period. University closures will be publicized through:
 - the University Newline (313) 577-5345*
 - WSU Homepage (www.wayne.edu)*
 - WSU Pipeline (www.pipeline.wayne.edu)*
 - WDET-FM (Public Radio 101.9)
 - by other local radio and television stations

* Note: The information on closures and class cancellations is likely to be found at these locations before it is broadcast by local radio and television stations.

- 7) For any and all issues not covered in this syllabus, refer to the "Student Due Process Policy".

Academic Integrity and Student Code of Conduct:

This is a remote course, one in which discussions occur and answers, including those to exams, are submitted online. I ask you commit to pursue success in this course according to the Wayne State University student code of conduct: <https://bog.wayne.edu/code/2-31-02> I request that you participate with civility and respect during the online discussions, provide constructive criticism for peer review and submit materials that you have completed without unauthorized aid.

COVID-19 Compliance:

All students are expected to familiarize themselves with mandatory campus health and safety guidelines – including practicing social distancing and wearing a face covering - by completing the Warrior Safe Training modules in Canvas. University policy requires students to complete a campus daily health screener beginning 48 hours before first coming to campus.

BIO 4110 in the time of COVID-19

Overview In the past, this course has been held in person and included a lot of in class discussion. Due to the pandemic, the course will now be held remotely, and is considered a synchronous class. What does this mean? Similar to past years, the class will meet at the regularly scheduled time and it is my expectation that students will attend and new this year, participate via Zoom. We will use break-out rooms to facilitate small group discussions. Slides with course materials, sometimes with a recorded explanation, and videos will be posted in advance. Additionally, homework questions will be posted. During the class time, rather than my giving lectures, we will go through the learning objectives for the topic and work through the homework questions as a group. Class attendance is not required, however, during class time we will answer the homework questions (which will ultimately be graded) and during the discussion, there will be quizzes over the assigned material. You must be present online during the discussion class to earn the quiz points. The Zoom meetings for both the lecture and discussion times will be recorded.

Technology Because the course will be held remotely over Zoom, the following technology is required:

- Desktop or laptop computer w/ camera, microphone, speakers. *Note, you will not be required to turn on your video for all class meetings, but it will be required a few times during the semester.*
- Reliable internet access
- Web browser (e.g., Firefox, Chrome, Safari)
- Canvas, Zoom, MS Teams app (free to students)
 - For assistance with Canvas, see C&IT's Student Intro to Canvas Course and Comprehensive Student Guide <https://tech.wayne.edu/kb/academic-services/canvas/500217>
 - For assistance with any of these technology issues, contact C&IT Helpdesk M-F from 7:30 am to 8 pm at 313-577-4357 or helpdesk@wayne.edu
 - For assistance with Zoom, refer to this site: <https://tech.wayne.edu/kb/academic-services/zoom>
 - For assistance with MS Teams, refer to this site: <https://tech.wayne.edu/kb/academic-services/canvas/500222>

Students who lack adequate hardware or reliable internet access should email the Dean of Students at doso@wayne.edu or call 313-577-1010 for assistance. Students on campus also have access to equipment through University Libraries. For more information, see Equipment Checkout Policy and Procedures. The University Libraries also have computer labs in several campus locations.

Support services We understand that remote learning is new to many of you. We also understand that this current time is one of challenge and, for some, heightened anxiety. WSU has developed many student support services to help you succeed in this new environment:

- **Learn Anywhere** site that provides resources and tips for taking online courses <https://success.wayne.edu/learnanywhere>
- **Academic Success Center** offers resources for improving study skills, building study groups, and similar activities <https://success.wayne.edu/>
- **Study Skills Academy** offers free study skills counseling and other services <https://success.wayne.edu/study-skills>
- **Technology support and services** tech.wayne.edu/coronavirus/student
- **Managing anxiety** <https://socialwork.wayne.edu/announcement/77956>
- **Counseling and Psychological Services** <https://caps.wayne.edu/>