

BIO 201: FOUNDATIONS OF BIOLOGICAL INQUIRY
DR. KEITH W. PECOR

LECTURE: M/T/W 9:00AM – 11:45AM

LAB: M/T/W 12:00PM – 2:30PM

REMOTE INSTRUCTION

INSTRUCTOR ACCESSIBILITY

My email address is pecor@tcnj.edu, and email is my preferred method of communication about course matters. I normally respond to messages received during the school week within 24 hours of receipt. Messages received by 5PM on the day before an exam will be answered the same day. Messages received during a weekend will be answered by the end of the first school day after the weekend. I do not check Canvas messages; use the campus email system. Office hours will be held via Zoom meetings by appointment.

CATALOG DESCRIPTION

An inquiry-based introduction to fundamental concepts and theories in biology that we will explore together as scientists. The course utilizes case studies and data from the scientific literature to examine the concepts that weave through three major themes: (1) What is Life? Organization and Flow of Information; (2) Evolution: Explaining Biodiversity; and (3) Biological Systems. Students are expected to engage with material presented during class to gain a deep understanding of the course goals, to develop critical thinking skills to apply to new problems, and to use the scientific method to investigate biological phenomena. Throughout the semester, students will have the opportunity to conduct novel research in a laboratory setting. This course is designed for biology majors, but is open to students in other majors who seek a rigorous background in biology.

NOTE: For Summer 2021, laboratory projects will be completed outside of the laboratory setting.

LEARNING GOALS & OBJECTIVES

There are Learning Goals and Learning Objectives associated with each section of the course and provided in a separate document. The Learning Goals addressed during a given class meeting will be noted on the slides or other materials. Reviewing the full list of Learning Goals and Objectives is recommended as one study strategy in this course.

COURSE MATERIALS

The following e-textbook and its associated online resources will be used during the course:
James Morris, *et al. Biology: How Life Works*, 3rd ed. W.H. Freeman: New York.

I will post the PowerPoint presentation for each lecture and other files as needed for lecture and lab on Canvas. Files will usually be posted the night before a given lecture or lab meeting. The PowerPoint presentations contain information and images from a variety of sources, and much of the content is protected by copyright. As such, the files are only for your personal use in this course and are not to be shared, directly or indirectly.

As a remote course, audio and/or video files will be shared with you. These files remain my intellectual property, may contain copyrighted material, and cannot be used or shared outside the context of this course.

EXPECTATIONS, ASSIGNMENTS, & GRADING

I expect that you will be present for class activities on days requiring synchronous participation (e.g, exams). I plan to deliver lectures and lab instructions according to the schedule in PAWS and will post videos for review outside class time. Your grade will be based on exams, lab assignments, and homework assignments.

Exams (300 points). An exam will be given after each of the three course units. The first two exams will be worth 100 points each, and the final exam will include 80 points from the third unit and 20 points of cumulative material. Exams will cover material from lecture and lab.

Laboratory Assignments (240 points). For each of the four lab projects, there will be one or more assignments totaling 60 points. The kinds of assignments will vary. Due dates for assignments are shown in the course calendar.

Homework Assignments (60 points). For each of the three course units, there are a series of LearningCurve assessments drawn from the assigned readings. All of the LearningCurve assessments for a given unit must be completed by 11:59PM on the day preceding the unit exam in order to receive full credit. Each unit is worth 20 points.

Letter grades will be determined using the following scheme:

Percentages	Letter Grade		Percentages	Letter Grade
100 – 93%	A		79 – 77%	C+
92 – 90%	A-		76 – 73%	C
89 – 87%	B+		72 – 70%	C-
86 – 83%	B		69 – 67%	D+
82 – 80%	B-		66 – 60%	D
			< 60%	F

ATTENDANCE POLICY

TCNJ's Attendance Policy (<https://policies.tcnj.edu/?p=77>) states that, "Students are expected to participate in each of their courses through regular attendance at lecture and laboratory sessions. It is further expected that every student will be present, on time, and prepared to participate when scheduled class sessions begin." For this online course, there will be some synchronous (*i.e.*, real time) elements and some asynchronous elements. For the former, you will be expected to be available during the days and times indicated on the schedule of classes in PAWS.

ACADEMIC INTEGRITY

All activities in this course are governed by TCNJ's Academic Integrity Policy (<https://policies.tcnj.edu/?p=130>). Any actions that are determined to be violations of the Policy will result in a penalty in keeping with the severity of the violation. If you have any questions about matters of academic integrity, please discuss them with me. Also, visit

<http://academicintegrity.pages.tcnj.edu> for more information about academic integrity at TCNJ. As the saying goes, an ounce of prevention is worth a pound of cure.

AMERICANS WITH DISABILITIES ACT

TCNJ's policy with respect to students and employees with disabilities can be found at the following URL: <https://policies.tcnj.edu/?p=145> Every effort will be made to provide reasonable accommodation for any student with a condition covered by the Americans with Disabilities Act (ADA). If you are entitled to accommodations under the ADA, please let me know by 16 June 2021, and I will work with the Accessibility Resource Center (<https://arc.tcnj.edu>) to make the necessary accommodations.

SCHEDULE ¹

DATE	LECTURE TOPIC	READING ²	LG ³	LAB PROJECT
14 Jun	Scientific Method	1.1	I.1-3	Scientific Method 1
15 Jun	Cells and Membranes	1.2-3, 2.2-3, 5.1-2	1.1-2	Scientific Method 2
	DNA Structure	2.5, 3.1-2	1.3	
16 Jun	Gene Expression 1-3	3.3-4, 4.2	1.4-6	Scientific Method 3
21 Jun	Protein Structure	2.5, 4.1	1.7-8	Gene Expression 1
22 Jun	Cell Division 1-2	11.2-3, 12.1, 14.2-3	1.11	Gene Expression 2
23 Jun	Exam 1	None	None	Gene Expression 3
28 Jun	What is Evolution?	20.1-3	2.1	Phylogeny 1
	Mechanisms of Evolution	20.5	2.9-10	
29 Jun	Selection and Adaptation	20.4	2.9-10	Phylogeny 2
	Diversity and Phylogeny	22.1-2	2.4	
30 Jun	Species and Speciation	21.1-3	2.7-8	Phylogeny 3
	Evolutionary Patterns	22.3-4	2.3,5	
5 Jul	Evolution Case Study: Photosynthesis	8.1-5	2.6	Structure & Function 1
6 Jul	Exam 2	None	None	Structure & Function 2
7 Jul	Gas Exchange & Circulation 1-3	26.1-2, 37.1-5	3.1-6	Structure & Function 3
12 Jul	Communities and Ecosystems 1-2	45.1-4, 46.3	3.1-2,7	None
13 Jul	Environmental Change	47.1-2, 48.1-4	3.8-9	None
14 Jul	Final Exam	None	None	None

¹ Schedule is subject to change as needed.

² Readings are chapters and chapter sections from *Biology: How Life Works, 3rd ed.*

³ Learning Goals. The full listing of Learning Goals and Learning Objectives is posted on Canvas.