

BIO 342: BIOLOGY OF THE INVERTEBRATES

DR. KEITH W. PECOR

LECTURE: M/TH 8:00AM – 9:20AM

SCIENCE COMPLEX P101

LAB: M 9:30AM – 12:20PM, W 8:00AM – 10:50AM, TH 9:30AM – 12:20PM

BIOLOGY BUILDING 213

INSTRUCTOR ACCESSIBILITY

My office is Biology Building 130, and I will hold office hours 9:30AM – 12:20PM on Tuesdays. You may also schedule an appointment to meet with me outside of office hours, in person or via Zoom. My office telephone number is 609-771-2460, and my email address is pecor@tcnj.edu. Email is my preferred method of communication about course matters, and 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 or break will be answered by the end of the first school day after the weekend or break. I do not check Canvas messages; use the campus email system.

CATALOG DESCRIPTION

A detailed consideration of the functional morphology and evolution of the animal phyla from the protozoa through the echinoderms. Adaptive radiation within the major groups is discussed and the interrelationships of the various phyla are analyzed. The laboratory experience encourages individual investigations of representative animals.

Course units: 1.0

Prerequisites: BIO 185 or 201

COURSE SYNOPSIS & LEARNING GOALS

This course will provide you with a survey of the non-vertebrate animals. These animals are quite diverse, so we will only be able to scratch the surface when discussing most groups. In addition to discussing evolutionary relationships among groups and the features that define each group, we will consider aspects of ecology, development, and reproduction. The fourth-hour requirement will be satisfied through a laboratory experience that is devoted to exploration of invertebrates in the form of prepared slides, preserved specimens, and live organisms.

After completing this course, you should be able to answer each of the following questions in a sophisticated and thoughtful way:

1. How are the relationships among invertebrate taxa determined?
2. What features are used to identify the members of various invertebrate taxa?
3. How do larval and reproductive characteristics allow us to better understand the ecology of invertebrates and the relationships among them?
4. How are invertebrates important, both ecologically and economically?

COURSE MATERIALS

There is not a formal textbook assignment for the course. The textbook that I like best has not been updated in ten years, unfortunately.

I will post the PowerPoint presentations for each lecture and the project for each lab on Canvas. Files will usually be posted the night before a given lecture or lab meeting. These files 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.

EXPECTATIONS, ASSIGNMENTS, & GRADING

I expect that you will attend class ready to engage with the material, ask questions, and participate in discussions. Your grade will be based on lecture exams, laboratory exams, and laboratory etiquette.

Lecture Exams. Three lecture exams will be given during the semester, and each exam will count for 100 points. One exam will be given during the final exam period, and it will be a cumulative, integrative assessment also worth 100 points.

Laboratory Exams. Two laboratory exams will be given during the semester, and each exam will count for 100 points. The laboratory exams will be in the form of practicals, in which you will be required to identify and answer questions about invertebrate specimens.

Laboratory Etiquette. Lab will be most effective if everyone works to the best of their ability on each project and keeps the specimens organized, instruments in good order, and lab clean. As incentive to meet these goals, lab etiquette will count for 30 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

COURSE POLICIES

In the space below, I highlight a few of the most relevant policies for this course. A full listing of course-related policies can be found here:

<https://academicaffairs.tcnj.edu/tcnj-syllabus-resources/>

Inclusion

“The campus community of The College of New Jersey is composed of people with diverse backgrounds, perspectives, and experiences. Given the increasing diversity of the population of the United States and the cultural effects of globalization, we must continually build upon our efforts to ensure that all perspectives can be expressed.” The full Campus Diversity Statement can be viewed here: <https://diversity.tcnj.edu/campus-diversity-statement/>

Attendance

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." In this class, there is no direct penalty for missing lecture. That said, absences will place you at a distinct disadvantage in terms of exams. For lab, attendance is mandatory. One unexcused absence from lab will reduce your class grade one letter (*e.g.*, a B becomes a C). Two unexcused absences will reduce your class grade two letters (*e.g.*, a B becomes a D). Three unexcused absences will result in failure of the class.

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: <http://policies.tcnj.edu/policies/digest/digest.php?docId=9206> 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 29 Jan. 2024, and I will work with the Accessibility Resource Center (<https://arc.tcnj.edu>) to make the necessary accommodations.

Electronic Devices

You may take notes with a laptop computer or other electronic device, but this should be done in a way that does not distract other students (*e.g.*, no internet browsing).

You may make audio recordings of my lectures, in accordance with the Class Recording Policy (<http://policies.tcnj.edu/policies/digest.php?docId=9236>).

Please silence your cell phone before class. On exam days, all cell phones must be silenced and put away before the exam begins. If I see a cell phone in a student's possession during an exam, the student will be referred for an Academic Integrity hearing.

SCHEDULE*

DATE	LECTURE TOPIC	LAB PROJECT
22 Jan	Classification and Relationships	None
25 Jan	Macroevolution	
29 Jan	“Protists 1”	None
1 Feb	“Protists 2”	
5 Feb	Porifera and Placozoa	“Protists”
8 Feb	Cnidaria and Ctenophora	
12 Feb	Exam 1	None
15 Feb	Teaching and Learning Summit	
19 Feb	Platyhelminthes	Porifera, Cnidaria, & Ctenophora
22 Feb	Gnathifera and Nemertea	
26 Feb	Mollusca 1	Platyhelminthes and Gnathifera
29 Feb	Mollusca 2	
4 Mar	Mollusca 3	Mollusca
7 Mar	Exam 2	
11 Mar	SPRING BREAK	None
14 Mar	SPRING BREAK	
18 Mar	Annelida 1	None
21 Mar	Annelida 2	
25 Mar	Lab Exam 1	Annelida
28 Mar	Arthropoda 1	
1 Apr	Arthropoda 2	Arthropoda 1
4 Apr	Arthropoda 3	
8 Apr	Arthropoda 4	Arthropoda 2
11 Apr	Exam 3	
15 Apr	Cycloneuralia 1	Arthropoda 3
18 Apr	Cycloneuralia 2 & Lophophorata	
22 Apr	Echinodermata	Cycloneuralia thru Chordata
25 Apr	Hemichordata and Chordata	
29 Apr	Lab Exam 2	None
2 May	Semester Review	
? May	Final Exam	None

* Schedule is subject to change as needed (e.g., inclement weather).