

# **GB 160 A & B: Principles of Organismal Biology**

**Spring 2024**

**Course Credit Hours: 3.000**

Day/Time: A: 12:00 – 12:50, MWF

B: 11:00 – 11:50, MWF

Meeting Location: Science Hall 142

- Instructor: Dr. Rachel Bowes
- School of Science and Math
- Office Location: Breukelman Science Hall 049
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- Email: [rbowes@emporia.edu](mailto:rbowes@emporia.edu)
- Preferred Method of Contact: email
- Office Hours: MW 1:00 – 3:00 pm, Additional office hours available by appointment

- Instructor: Dr. David McKenzie
- School of Science and Math
- Office Location: Breukelman Science Hall 157
- Telephone: 620-341-5617
- Email: [dmcken1@emporia.edu](mailto:dmcken1@emporia.edu)
- Preferred Method of Contact: email
- Office Hours: MW 1:00-4:00, F 1:00-2:00 or by appointment

## **How to use this syllabus**

This syllabus provides students with information specific to this course, and it also provides information about respective University policies. This document should be viewed as a course overview; it is not a contract and is subject to change as the semester evolves.

## **Disclaimer**

This syllabus is subject to change in part at the discretion of the instructor in accordance with the University policies and guidelines.

## **Course Description**

A study of the evolution, diversity, and ecology of living things with special emphasis on the structure and function of flowering plants and vertebrates.

## **Program Learning Outcomes**

- Students will formulate testable hypotheses that distinguish between a number of plausible explanations.
- Students will be able to read, create, and interpret graphs of scientific data.
- Students can summarize and explain biological research in a clear, reasonable, and logical manner through written or verbal means.
- Students will demonstrate knowledge of the concepts and principles of organismal biology.

## **Student Learning Outcomes**

A primary objective of this course is to develop your ability to think critically about the world around you. During class you can expect to be called upon to: make inferences from observations, recognize assumptions, reason deductively, interpret data and evaluate arguments. YOU WILL BE AN ACTIVE, NOT PASSIVE, LEARNER. To develop your critical thinking skills we will use major biological concepts. (Biology BS Program Learning Outcomes ID, IE, IF, IG, IIA, & IIB)

Evolution is the thread that holds the discipline of biology together. The geneticist Theodosius Dobzansky once stated: "Nothing in biology makes sense except in the light of evolution." Unfortunately, evolution is widely misunderstood. Therefore, we will use an evolutionary approach in developing the other concepts addressed in the course.

## **Class Protocol**

Be on time, pay attention, and work hard. All students will be expected to attend class and are responsible for all material presented whether you are present or absent. Students should email the instructor prior to the start of class to inform them of any absences. There tends to be a strong correlation between class attendance and grade earned (Randy Moore, et. al.2003., American Biology Teacher 65: 325-329.); students who skip classes generally do poorer than students with regular attendance and participation. Examinations will be based primarily on material presented in class.

## **Course Changes**

The instructor reserves the right to make modifications/changes in the course as necessary for the purposes of instruction.

## **Required Texts/Readings Textbook**

- Biology, 13th ed. Raven, Johnson, Mason Losos, and Duncan, McGraw Hill.
- McGraw Hill Connect (accessed through Canvas, see instructions below)

## **Student Instructions:**

This course is part of the Hornet Textbook Bundle. The digital materials required for this course have been integrated with Canvas and can be found in the Course Materials link in your Canvas course. Please sign into Canvas to access your course and course materials.

## **Student Support:**

Customer Care is available to help students with questions about accessing their course material or using their eTextbook. Be sure to share the information below with your students.

*Customer Care is available 24 hours a day, seven days a week - 24/7.*

- Open a ticket Online for the Customer Care team:  
<https://tinyurl.com/customercarerequest>
- Email the Customer Care team: [bookstorecustomercare@bncollege.com](mailto:bookstorecustomercare@bncollege.com)
- Call the Customer Care team: 1-844-9-EBOOKS (1-844-932-6657)

*We suggest that students provide Customer Care with their name, school email address, school, course information and screenshots of the issue if applicable.*

**Questions?** Contact your Bookstore Manager

*Mike McRell*  
[mmcrell@emporia.edu](mailto:mmcrell@emporia.edu)  
620.341.5847

## **Grading Criteria**

Your grade will be based primarily on the results of four examinations given during the semester. Each exam will be worth 100 points and will concentrate on the new material presented. In addition, you will be required to critique one outside readings, read the assigned chapters of your textbook, complete a series of online assignments, and prepare and participate regularly in class. Grades will be based on the following criteria:

semester exams (4)	400 pts
participation	50 pts
group projects and presentations	50 pts
book critique	50 pts
McGraw Hill Connect Assignments	50 pts
<b>total</b>	<b>600 pts</b>

The grading scale is as follows:

Points/ Percentage	Letter Grade	Grade Points	Interpretation
≥93%	A	4.00	A range denotes excellent performance
90-92.9%	A-	3.70	
87-89.9%	B+	3.30	
83-86.9%	B	3.00	B range denotes good performance
80-82.9%	B-	2.70	
77-79.9%	C+	2.30	
70-76.9%	C	2.00	C range denotes satisfactory performance
60-69.9%	D	1.00	D range denotes unsatisfactory performance
≤59.9%	F	0.00	

Make up exams will be given ONLY WITH PRIOR APPROVAL OF THE INSTRUCTOR. A missed exam scores as a 0. There is no extra credit.

## **Evaluations**

- Attendance and Participation (50 points)**

During most classes you will be asked to respond to one or more questions, frequently at the beginning of the class period, about material covered during the previous class or assigned readings. You may also be required to respond to in-class questions. Over the course of the semester a total of 100 points will be generated from individual student responses to these questions.

- Book Critique (50 points)**

Each student will be required to read and critique ONE book, RELATED TO BOTANY, ECOLOGY, ZOOLOGY, or EVOLUTION, approved by the instructors. Your critique should be written following the format outlined by Jan Pechenik. 1993. A Short Guide to Writing about Biology, 2nd ed. A 1-page summary in posted in CANVAS under announcements where there is also a suggested reading list. Books not on this list must be approved by your instructor.

- Group Projects and Presentations (50 points)**

Over the course of the semester a total of 50 points will be generated from group projects and presentations. More information will be provided during the semester.

- McGraw Hill Connect Assignments (50 points)**

To help you familiarize yourself with your textbook and provide activities to go along with the lectures, there will be several McGraw Hill Connect assignments throughout the semester.

Access to McGraw Hill Connect assignments is through Canvas. Over the course of the semester a total of 50 points will be generated from individual student responses to these assignments.

- **Exams (100 pts. each):** Four exams will be administered over the course of the semester. Exams will evaluate student's knowledge of material covered in class and will consist of multiple choice, true false questions, fill in the blank, and short answer questions.

All exams & quizzes will take place online on Canvas. They will be open note and book. Exams will be due on the date and at the time outlined in the class schedule. If you are unable to take an exam for a valid reason, please let me know through an email, I expect that I should know about such a conflict with reasonable prior notice (typically 1-2 weeks prior).

### **Late Assignments, missed Assignments, Exams, and/or Class Absences**

You are expected to attend and be an active participant in every class. In the absence of legitimate documentation for missing class (illness, family emergency, etc.), your participation grade will be docked accordingly. If you do have a justifiable reason for missing a class period, I will require appropriate documentation prior to the class, save for exceptional circumstances. All assignments are due on no later than the beginning of class time on the due date. I am trying to teach you about biology, not take points away from your final grade; if you have trouble with the homework, send me an email or come into office hours so I can help!

My guiding principle for illness is this: If you are sick or feel sick, you should not go to class or come to work. Stay home and take care of yourself. This applies to all illnesses including COVID. Students who are sick (with anything, not just COVID) and need to miss class should contact both the instructor before class ([rbowes@emporia.edu](mailto:rbowes@emporia.edu) and [dmcken1@emporia.edu](mailto:dmcken1@emporia.edu)) as well as the Office of Student Affairs, (VPSA@emporia.edu). This needs to occur every time a class must be missed due to illness. Communication is vitally important in these new circumstances, and it is my expectation that you will keep me informed of pertinent developments or changes in your circumstances.

## Syllabus Policies and Student Resources

### Academic Dishonesty Policy

Academic Dishonesty, a basis for disciplinary action, includes but is not limited to activities such as cheating and plagiarism (presenting as one's own the intellectual or creative accomplishments of another without giving credit to the source or sources). *In this course any acts of academic dishonesty will result in a failing grade for the assignment. Multiple infractions, or more egregious types of academic dishonesty may result in failure of the course and the assignment of an "XF" grade. Furthermore, any infraction will be reported to the Office of the Provost who may impose additional penalties.* The University policy is presented on the Academic Affairs website as the [Academic Affairs Academic Dishonesty Policy](#)

### Student Accommodations

Student Accessibility and Support Services (SASS) at Emporia State University (ESU) ensures that students with disabilities have full and equal access to the programs and services of ESU without discrimination. Any student who feels they may need academic accommodations or access to accommodations based on the impact of a documented disability should contact and register with SASS during the first week of class or as soon as possible after the diagnosis of a disability. SASS is the official office to assist students through the process of disability verification and coordination of appropriate and reasonable accommodations. Students currently registered with SASS must obtain a new accommodation memo each semester. The SASS office is located in William Allen White Library, 2nd Floor (Office 209K) or phone 620-341-6637/Email SASS@emporia.edu. The SASS office website URL is <http://www.emporia.edu/sass>.

### Diversity, Equity, and Inclusion

Emporia State University supports an inclusive learning environment where diversity and individual differences are understood, respected, appreciated, and recognized as a source of strength. We expect that students and faculty at Emporia State will respect differences and demonstrate diligence in understanding how identities, perspectives, behaviors, and worldviews may be different from their own. If there are aspects of this course that result in barriers to your inclusion or the inclusion of those around you, contact the individual with whom you are most comfortable: your academic advisor, the Department Chair, your School or College Dean, the Dean of Students, the Senior Director of Diversity, or your course instructor.

### Acceptable Use Policy

It is University policy to provide computing and information technology resources to faculty, staff, students, official university affiliates, and others in support of the education, research, and public service missions of the university. Users of university information technology resources are responsible for using these resources only as allowed by law and in connection with the university's core teaching, research, service, and other identified missions.

resources:	Usage	Policy	URL

[https://sites.google.com/g.emporia.edu/emporiastateuniversity/usage-policy\)](https://sites.google.com/g.emporia.edu/emporiastateuniversity/usage-policy)

## **Confidentiality of Student Information (FERPA)**

ESU affords students their full rights in conformity with the Family Educational Rights and Privacy Act of 1974, its amendments and implementing regulations. Eligible students have the right to inspect their educational records request amendment of their records they believe to be incorrect or misleading and restrict disclosure of their information in specific situations. Students may waive their rights to inspect and review confidential statements and confidential letters of recommendation by providing a signed voluntary statement if, in conformity with applicable law; 1) the student is notified, upon request, of the names of those providing statements and letters, 2) the letters and statements are only released for the original purposes stated, and 3) the waiver is not a condition of admission or other benefit. (resources: Information on FERPA URL <https://www.emporia.edu/academics-majors/academic-affairs/office-registrar/enrollment-registration/student-and-family-educational-rights-and-privacy-act-1974-ferpa/>)

## **Withdrawal**

If a student elects to withdraw from one or more classes after the official drop period and through the tenth week of a regular semester, the grade of "W" will be recorded on the transcript regardless of the student's academic standing in that class. Students must have their advisor sign the withdrawal form.

After the tenth week of the regular semester the student may not withdraw from class nor may the instructor assign the grade of "W". In extreme cases, the student may appeal to the Office of the Associate Vice President for Academic Affairs to receive a grade of "W" after the tenth week.

Classes taught in less than the regular semester will follow a similar pattern. If a student elects to withdraw from one of these shorter classes after the official drop period and before 5/8 of the class periods have been completed, the grade of "W" will be recorded on the transcript. After 5/8 of the class periods have been completed, the student may not withdraw, nor may the instructor assign the grade of "W." In extreme cases, the student may appeal to the Office of the Associate Vice President of Academic Affairs to withdraw with the grade of "W" after 5/8 of the class periods have been completed.

## **Course Incompletes**

If a student takes an Incomplete in the course, for a grade of I, the student's grade will be reduced by a grade level when the work is completed during the next semester. For example, an A grade will be reduced to a B grade. Incomplete work that is not finished by the end of the next semester automatically turns to an F (by the Registrar's Office). According to ESU policy, Incompletes can be assigned only in the direst of circumstances. The Teachers College may require a signed contract between the student and the professor to obtain an Incomplete grade.

## **Basic Needs**

Basic needs insecurities can be barriers to students' success, which is why we need your help. As you complete your syllabi for the fall semester and prepare for the first day of class, we encourage you to share information about available campus and community resources with your students. Encourage students to visit [emporia.edu/basicneeds](http://emporia.edu/basicneeds) to find resources for affordable housing, financial support, and food assistance.

We have identified strategies and resources instructors might find helpful in supporting students' basic needs and put together a faculty toolkit. Example strategies include posting about resources on Canvas, talking about them with students at various turning points throughout the semester, and adding a basic needs statement to syllabi, among many others. For a sample syllabus statement, see <https://bit.ly/ESUbasicneedssyllabus>. The *Basic Needs Coalition* is a group of students, faculty, staff, and community members who work together to ensure all Hornets have access to the resources they need to succeed inside and outside the classroom. If you have questions or concerns for the coalition, please email [basicneeds@emporia.edu](mailto:basicneeds@emporia.edu).

## **Campus Emergencies**

In the event of a major course or campus emergency (such as a significant COVID-19 outbreak), the mode of instruction, course requirements, deadlines, and/or grading procedures are subject to changes that may be necessitated by a revised academic calendar or other circumstances beyond my control. In the event of such a circumstance, communication will occur through Canvas and by email from your instructor. You may also request information about changes in this course by emailing the instructor.

## **Hardships**

If something happens during this course that makes it difficult or impossible for you to complete course work or attend class for an extended period of time, please inform the instructor immediately. Consideration for extenuating circumstances, may be granted by the instructor. There are campus resources dedicated to addressing student hardships and referrals to these resources may be obtained by contacting the Office of Student Affairs.

## **Student Health and Safety**

To keep yourself and fellow members of the campus community safe, please screen yourself for symptoms of COVID-19 before attending class. Symptoms include headache, cough, shortness of breath or difficulty breathing, sore throat, new loss of smell or taste, chills, repeated shaking with chills, muscle aches and pains, among others. Please review posted signage for further instructions on how to self-screen. If you are experiencing any of these symptoms, please do not attend class. If you begin experiencing these symptoms during class, please exit the classroom. You should then return to your residence and notify the instructor of your absence. Contact the Student Wellness Center by calling 620-341-5222, if you believe you need testing or medical consultation.

## **Undergraduate vs. Graduate Credit**

Undergraduate students enrolled in 700 level courses will receive undergraduate credit (not graduate credit) unless they have a previously approved senior rule application or dual/accelerated enrollment form on file in the Graduate School. Undergraduate credit earned in 700 level courses cannot later be counted toward a graduate degree.

# Spring 2024 Class Schedule

Date	Lecture Topic	Chapter(s) in Textbook
<b>UNIT 1: Evolutionary Biology</b>		
January 17	Evidence of Evolution	21
19	Population Genetics	20
22	Mechanisms of Evolution	22
24	Speciation	22
26	Phylogenies, Animal Evolution	20, 22
29	Go Extinct!	
<b>UNIT 2: Diversity of Animals</b>		
31	Animal Form & Diversity	23, 32
February 2	Animal Diversity: Porifera–Cnidaria	32
5	Animal Diversity: Lophotrochozoa	33
7	Animal Diversity: Lophotrochozoa	33
9	Animal Diversity: Ecdysozoa	33
12	Animal Diversity: Deuterostomia	34
14	Animal Diversity: Deuterostomia	34
<b>Take-home Exam 1, due before class on Monday, February 19.</b>		
<b>UNIT 3: Animal Form</b>		
16	Animal Organization & Integumentary System	41
19	Homeostasis, Nervous Systems	42
21	Animal Skeleto-Muscular Systems	45
23	Animal Nutrition & Digestion Systems	46
26	Animal Respiratory Systems	47
28	Animal Circulatory Systems	48
March 1	Animal Osmotic Regulation & Excretion Systems	49
4	Animal Immune Systems	50
6	Animal Reproduction & Development	51, 52
8	Evolution of Animal Form: Group Project & Presentation	
<b>Take-home Exam 2, due before class on Monday, March 18.</b>		
March 11-17 <b>*** Spring Break – No Class ***</b>		

Date	Lecture Topic	Chapter(s) in Textbook
<b>Unit 4: Plant (and other) Diversity</b>		
Mar. 18	Viruses and Prokaryotes	23, 26, 27
Mar. 20	Eukaryotes and Protists	28
Mar. 22	Fungi	31
Mar. 25	Seedless Plants	29
Mar. 27	Seed Plants	30
<b>Unit 5: Plant Systems</b>		
Mar. 29	Plant Cells and Tissues	4, 35.1, 35.2
Apr. 1	Roots	35.3
Apr. 3	Stems	35.4
Apr. 5	Leaves	45.5
<b>Take-home Exam 3, due on 12 April at noon (12:00)</b>		
Apr. 8	Transport of water and solutes	36
Apr. 10	Secondary Growth	***
Apr. 12	Respiration and Photosynthesis	7, 8
Apr. 15	Sensory Systems and Response hormones	39.5
Apr. 17	Sensory Systems – Light Responses	39.4, 40.2
Apr. 19	Plant Reproduction	40
<b>Unit 6: Ecology</b>		
Apr. 22	Ecology: Interactions	44
Apr. 24	Ecology: Populations	45
Apr. 26	Ecology: Communities	45
Apr. 29	Ecology: Ecosystems	46
May. 1	Ecology: Global Patterns, Biomes	47
May. 3	Ecology: Global Patterns, Biogeochemical Cycles	47
<b>Take-home Exam 4, due on 9 May at noon (12:00)</b>		