

The Indiana Academy for Science, Mathematics, and Humanities
SCI04310 – Biology II: Zoology (CL)

Instructor: Donald Winslow, Ph.D.

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Office hours: MWF 9:00-10:30; Tuesday 9 AM-noon and 2-2:30 PM; Thursday 9:00 AM-11:00 AM

Class meetings: In Burris 211. MWF 11:00-11:50 AM; Lab Thursday 4-5:45 PM

Some of the “laboratory” sessions will be field excursions; *i.e.*, we will conduct them outside.

Description:

From the course catalog (<https://academy.bsu.edu/catalog/>):

Prerequisite: One year biology

Co-requisite: Biology II: Zoology Lab (SCI04310L)

Credit: 1.5 credits

Offered: Fall

Zoology is a comprehensive survey of the diversity found in Kingdom Animalia. This course addresses the issue of why such diversity occurs, and what factors influence and constrain it. Laboratory explorations of live and preserved specimens allow hands-on examination of the structure and behavior of animals.

Course learning outcomes:

A student completing this course will be able to describe the major characteristics of various animal groups and explain fundamental principles in animal physiology, behavior, and ecology.

Course textbooks:

Cleveland Hickman, Jr.; Allan Larson; Susan Keen; Helen l’Anson; and David Eisenhour. 2024. *Integrated Principles of Zoology*, 19th ed., McGraw-Hill: New York.

Larry Roberts; Cleveland Hickman, Jr.; Allan Larson; and Helen l’Anson. 2024. *Laboratory Investigations in Integrated Principles of Zoology*, 19th ed., McGraw-Hill: New York.

We will be working with the online versions of these two texts. It will be useful if you can bring a laptop to class. We will supplement these texts with other relevant material throughout the semester. Each student also needs a **lab notebook** in which to record lab and field observations. This should be separate from the notebook that you use for lecture notes.

Please note that some aspects of this course may need to be changed during the term, so this syllabus is subject to revision. If the syllabus is revised during the term, the updated syllabus will be posted on Canvas. Please refer to Canvas for updated information.

Assignments:

The assignments for the course are shown in the table below.

Assignments	Date due (approximate)	Points
Participation	Every class meeting	30
Homework	Weekly	30
Exam I	9 September	40
Exam II	2 October	40
Time budget report	11 October	50
Waterfowl report	1 November	50
Exam III	8 November	40
Lab practical		40
Lab notebook		30
Comprehensive final exam	TBA (Finals Week)	50
Total		400

Grading Scale:

100 – 93% = A	< 90 – 87% = B+	< 80 – 77% = C+	< 70% = D*
< 93 – 90% = A-	< 87 – 83% = B	< 77 – 70% = C	
	< 83 – 80% = B-		

Attendance

Please arrive on time to class. The instructor is required to take attendance so that all students are accounted for. If you arrive late to class, someone might start checking to see where you may be. If you are late, you may need to remind the instructor to change the absence to tardy. This will disrupt our workflow and possibly the workflow of others, so please try to avoid being late.

If you miss lecture for any reason, you are responsible for obtaining any notes, announcements, reading material, or assignments from the instructor or a classmate. If an unavoidable conflict, emergency, or illness prevents you from attending class or completing an assignment on time, please inform the instructor as soon as possible (preferably beforehand). The Academy and not the instructor determines whether an absence is excused or unexcused. No direct grade penalty is assessed for an absence. However, you will have a much greater chance of success if you are present as much as possible.

Indiana Academy Absence Policy

It is the policy of the Indiana Academy that any absence from class is unexcused, except for illness, death in the family, college or school-related activities, and extenuating circumstances. When a student is absent from a class, the instructor reports the student absence to the Faculty Attendance Coordinator in the Office of Academic Affairs. Unless the absence is excused by a school official, it is considered unexcused. The decision as to whether an absence is excused is not determined by the instructor. Four or more unexcused absences in any particular class a student takes will lead to academic and residential consequences to be determined by the Office of Academic Affairs and the Office of Residential Life that may include detention, residential groundings, parent/principal conference, among others.

Academic conduct

It is important to prepare for each class meeting by completing the reading and any assignments that are due. Assignments should be submitted on Canvas or in class, depending on the assignment. Although some activities such as labs may be completed in pairs or groups of students, each student is individually responsible for submitting assignments with original writing (not copied from your lab mate). You are encouraged to discuss answers to lab activities with other class members, but the wording should not be the same. Do not share word processing files with each other, but make sure each student has access to the raw data for analysis.

You are expected to conduct yourself according to the Indiana Academy Student Handbook (<https://academy.bsu.edu/handbook/>), especially the Code of Conduct and the section on Academic Integrity. On writing assignments, please be sure to use your own wording and cite all sources of information, whether from the Internet or otherwise. If you are not sure how to cite something, ask the instructor. Note that language copied verbatim from a book, website, another student's paper, or any other source is considered plagiarism unless it is in quotation marks and cited. Plagiarism is a form of academic dishonesty. Please do not plagiarize or cheat in any other way. An infraction may result in a 0 for the assignment. Also, the instructor is required to report any ethics violations to the Academic Integrity Board or (the Director of Academic Affairs and your parents).

Artificial intelligence (AI) technology

Technologies referred to as “artificial intelligence” (AI) are becoming increasingly salient in our lives, sometimes with more emphasis on artificial than on intelligence. The original Turing test (Turing, 1950) for artificial intelligence is to engage in dialogue with what we would now call a “chatbot”. If the discourse is indistinguishable from that of a human, then it is considered artificial intelligence. Modern large language models such as ChatGPT (OpenAI, 2022) exemplify this approach by stringing together words from human writing to sound intelligent (without always being intelligent).

These tools can be very useful, from simple spellchecks to generating computer code. As we adopt these technologies, however, it is important to verify that information obtained is correct and to avoid presenting as our own work that was produced by software or anyone else. We can avoid these pitfalls if we use the auto-generated content as a starting point but not as a finished product. Find the original sources of information and cite those. ChatGPT has a reputation for making up references that don't exist, so don't rely on it.

References and resources on AI:

OpenAI. 2022. ChatGPT, Version 3.5. OpenAI, accessed 12 May 2024 at <https://chatgpt.com/>.

Turing, Alan M. 1950. Computing machinery and intelligence. *Mind* LIX(236):433-460, <https://doi.org/10.1093/mind/LIX.236.433>, accessed 12 May 2024 at <https://academic.oup.com/mind/article/LIX/236/433/986238?login=false>.

Classroom conduct

Please be considerate of other classmates. Keep any devices not used for classroom activities silenced or off. Use of electronic devices during class can be distracting to yourself and others and interfere with the learning process. Your phone should be put away if it's not being used for class. A new Indiana state law prohibits the use of phones in class by high school students except during an emergency or when being used for class activities with the instructor's permission. Laptops can be used in class for class activities, but repeated use for non-class activities may result in a loss of that privilege. A calculator (but not a phone) may be used for exams.

IA Wireless Device Policy:

Pursuant to Indiana Code 20-26-5-40.7, The Indiana Academy for Science, Mathematics and Humanities prohibits student use of wireless communication devices for non-instructional purposes in the classroom. As such, any and all portable wireless devices, that have the capability to provide voice, messaging, or other data communication between two or more parties, must only be used for academic purposes directly tied to the classroom activity or related educational task. Exceptions to this wireless device policy are eligible through academic accommodations, individualized education programs, or with instructor approval permitting the use of a wireless device for justification related to health, safety, and/or well-being. The improper use of a wireless device in an active classroom setting is subject to disciplinary action including but not limited to; a verbal warning, temporary seizure of said device by a school official, an unexcused absence for the class in question, written communication to parent/guardian, among other elevated consequences for repeated improper use.

Please treat each other with respect and refrain from annoying behavior. Do not interrupt another student or the instructor. If you are having difficulty getting a word in, you can raise your hand. Examples of improper conduct include having extended conversations, working on assignments for other courses, sleeping, etc. Serious and/or chronic problems may be cause for dismissal from the course.

Late work

If you are late submitting an assignment because you missed class, see the section above on attendance. If an absence is excused by the Academy, the instructor will make every reasonable effort to ensure you have the opportunity to make up any assignments associated with the absence. If you are late submitting an assignment associated with an unexcused absence or for a reason unrelated to missing class, the instructor may grade the assignment as time allows.

If an exam is missed because of an excused absence, the instructor will make every reasonable effort to ensure you have the opportunity to make it up. If the absence is unexcused, a make-up exam may be allowed at the instructor's discretion. If a lab is missed, it may be difficult to arrange for a student to make it up due to supplies and logistical constraints. If the absence was excused, the instructor may need to substitute an alternate activity.

Library research

Through your association with Ball State University, you have access to an academic research library

with many useful materials. This includes online access to many peer-reviewed scientific journals through bibliographic databases to which Ball State subscribes. To access these databases, go to <https://www.bsu.edu/library>, and scroll down to "Databases". The databases are listed in alphabetical order by the first letter. Two good ones to try are Academic Search Complete under "A" and JSTOR under "J". PubMed is good for topics in nutrition, microbiology, biomedicine, biotechnology, genetics, and cellular and molecular biology. When you click on one of these databases, you will be prompted to log into your Ball State account. You can search for articles on particular topics and then access the full text of many articles from the journal publishers' websites.

Also, if you are logged into <https://my.bsu.edu>, try searching on Google Scholar at <https://scholar.google.com>. You should see "Find it at Ball State" for references available through university subscriptions.

Student accommodations and special circumstances

If you have an IEP or a 504 that provides accommodations, have emergency medical information to share, or need special arrangements in case the building needs to be evacuated, please make an appointment with the instructor as soon as possible.

If you are struggling with study habits, stress, and/or personal issues, I encourage you to discuss the situation with your SLC and/or contact the Guidance Office for help in addressing these issues so that you can thrive at the Academy. Many resources are available for students, and important contact information is listed below:

For guidance: Meg Wright (mewright@bsu.edu), phone:765-285-7407; office: WA183.

To find a tutor: Meg Wright (mewright@bsu.edu), phone:765-285-7407; office: WA183.

For mental health: Dr. Mindy Wallpe (mcwallpe@bsu.edu), phone: 765-285-5483; office: WA 160-C.

Course evaluations

At the end of the semester, each student will have the opportunity to evaluate the course, instructor, and materials. The instructor will not see the results of the evaluations until after grades have been submitted. Your frank and constructive responses will help improve the course for future semesters.

INDIANA ACADEMY INCLUSIVE EXCELLENCE STATEMENT:

Ball State University aspires to be a university that attracts and retains a diverse faculty, staff and student body. We are committed to ensuring that all members of the community are welcome through valuing the various experiences and worldviews represented at Ball State and among those we serve. We promote a culture of respect and civil discourse as expressed in our Beneficence Pledge. As a reflection of Ball State's commitment to respect, civil discourse, and the Beneficence Pledge, Inclusive Excellence at the Indiana Academy emerges as one of the priorities of our living and learning community. We strive to exist together respectfully and compassionately, creating an environment where every member can thrive. Unfortunately, there might be occasions when something occurs that disrupts our progress toward meeting these objectives. In this case, we encourage any member of the Academy community to file a Campus Climate Report (CCR)

https://bsu.qualtrics.com/jfe/form/SV_6mbRbL5acAntUTI. All reports will be taken seriously, and appropriate responses will be carried out by Academy administration.

Schedule (subject to revision as needed)

12 August	Introduction to class, safety (school, lab, and field)
14 August	Introduction to zoology, the origin and chemistry of life, lab safety worksheet
15 August	Lab on microscopy and protists
16 August	Cell theory
19 August	Cellular metabolism
21 August	Genetics
22 August	Lab on cell division and development
23 August	Genetics problems
26 August	Evolution
28 August	Morphology
29 August	Lab on animal classification
30 August	Animal ecology and conservation
4 September	Animal taxonomy
5 September	Lab on sponges and radiate animals
6 September	Review for Exam 1
9 September	Exam 1
11 September	Phylogeny
12 September	Lab on simple bilaterally symmetrical animals
13 September	Outgroup analysis
16 September	Reproduction
18 September	Human reproductive physiology
19 September	Lab on molluscs
20 September	Animal development
23 September	Porifera, ctenophores and cnidarians
25 September	Time budget research and scientific writing
26 September	Field study of squirrel time budgets
27 September	Bilaterally symmetrical animals
30 September	Review for exam 2
2 October	Exam 2
3 October	Lab on annelids
4 October	Parent-teacher conferences (early or by Zoom earlier in the week for Winslow)
9 October	PSAT, no zoology class
10 October	Tuesday labs meet on Thursdays, so no Zoology lab
11 October	Time budget report due
14 October	Flatworms, roundworms, rotifers, etc.
16 October	Waterfowl research
17 October	Waterfowl field trip
18 October	Lophotrochozoans
21 October	Convention on Biological Diversity Council of Parties begins in Colombia
23 October	Molluscs and annelids
24 October	Lab on chelicerates
25 October	Trilobites, chelicerates, and myriapods

28 October Crustaceans and insects
30 October Echinoderms and hemichordates
31 October Lab on crustaceans and insects
1 November Waterfowl report due
4 November Fishes
6 November Review for exam 3
7 November Lab on echinoderms
8 November Exam 3
11 November Amphibians and reptiles
13 November Birds
14 November Lab on protochordates, fishes, amphibians, and reptiles
15 November Mammals
18 November Discussion on prairie dogs
20 November Support, protection, movement, homeostasis
21 November Lab on birds and mammals
22 November Respiration and circulation, nutrition and digestion
2 December Internal signaling: nervous system
4 December Endocrine system
5 December Lab practical exam
6 December Immunity
9 December Animal behavior
11 December Overflow day
12 December Birdwatching walking field trip
13 December Review for final examination
16-19 December Final exams