# BSC 2005 – Biological Sciences (online)

## UF Sections 04F0 (11073), 04F2 (11074), 04F3 (11075), 04FB (11076), 04FF (11077), 04FH (11078), 04GF (11079), 04H7 (11095), 053C (11096), 085G (16216)

## UFO Sections 064H (11097), 065A (11098), 1G93 (11099), 1G94 (19687), 1G95 (19688)

## Syllabus for Fall 2025

## I. Course Description

This course applies the scientific method to critically examine and explain the natural world including but not limited to cells, organisms, genetics, evolution, ecology, and behavior. Primarily intended for non-majors. 3 credits.

Note: BSC2005L is a separate course, and is taught by a separate instructor – NOT Dr. Gerlach!

## II. Course Meetings

**First day of classes:** Thursday 21 August 2025
**Last day of classes:** Wednesday 03 December 2025
**Final exam period:** Saturday 06 December 2025, 7:30 AM - 9:30 AM

**Course Meeting Times:** This course is entirely online and asynchronous, with weekly deadlines but no fixed meeting times except for exams. Exams will be available online during a scheduled time window on the days posted. Students may work on course material at their own pace from any location with a reliable internet connection, but it is each student's responsibility to keep up with course assignments and meet posted deadlines for all assignments. All deadlines and exam times are US Eastern time; students who are not in the US Eastern time zone are responsible for doing the appropriate conversions to ensure their work is submitted on time.

## III. Instructors

**Course Instructor:**

**Dr. Nicole Gerlach** (she/her)
Department of Biology
Office: 520 Carr Hall / Phone: 352-392-2419
E-mail: ngerlach@ufl.edu (preferred)

**Teaching Assistants:**

| | | |
|---|---|---|
| **TBA** | **TBA** | **TBA** |
| Sections: | Sections: | Sections: |
| TBA | TBA | TBA |
| E-mail: TBA | E-mail: TBA | E-mail: TBA |
| Office Hours: TBA | Office Hours: TBA | Office Hours: TBA |

## IV. Course Communications

**A. Course Website: https://elearning.ufl.edu/ or CANVAS LINK GOES HERE**

**B. Office Hours:** All office hours will be held via Zoom. Office hours will be held on Wednesdays from 10:00 a.m. – 11 a.m. and Thursdays 2:00-3:00 p.m. More details, including the Zoom link, can be found on the "Contact Your Instructors" page in Canvas.

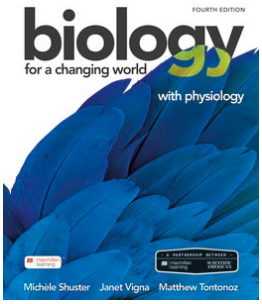
**C. Contacting Your Instructors**: If you have a question about course mechanics or course material that cannot be answered from the syllabus, course announcements, or the course FAQ, please post it to the Discussion Boards on Canvas (see section VIII. "Getting Help", below). If you have a question involving a personal/grade-related issue, please e-mail your TA and Dr. Gerlach. All e-mail correspondence must originate from your @ufl.edu account or the Canvas Inbox system, and should contain "BSC 2005" somewhere in the subject line. E-mails not meeting these requirements may not be recognized by our e-mail filters, and thus may not be answered. Barring unusual circumstances, expect a reply within 24 hours during the week, and 48-72 hours over the weekend. E-mails and Discussion Board posts are typically checked at least once per day, but sometimes not more than that.

D. **Communications From Your Instructors:** Each student is solely responsible for reading and following the instructions, guidelines and schedules in this syllabus and on the course webpage and in course announcements. Not having read the information in this syllabus, on the webpage, or in course announcements will not constitute an excuse for missing deadlines, assignments, or other assessments. Please set your preferences in Canvas so that you receive timely notifications of course announcements and other information.

## V. Course Resources

**A. Textbook**

*Biology for a Changing World, 4e* by Shuster, Vigna, and Tontonoz. W.H. Freeman (publisher), 2021.




A physical copy of the textbook is not required for the course, but is optionally available in the UF Bookstore. The required Achieve access (see below) includes an electronic copy of the textbook.

There are current versions of the textbook on reserve at the Marston Science Library. Visit the Reserve Materials area to check out these copies.

**B. MacMillan Online Resources**

Achieve is an online assignments and tutorial system from the textbook publisher that includes an electronic version of the textbook. Achieve will be used for required readings, interactive activities, and quizzes. Access to Achieve is required for BSC2005.

Achieve will be offered at the lowest cost option through UF All Access. UF All Access allows students the choice to "opt-in" for a limited time to receive access to Achieve for a reduced price and pay for these materials through their student account. Students who do not choose this option will be able to purchase the access code directly from the MacMillan site. All options provide access to the same materials.

**To access Achieve via UF All Access:**

1. Go to https://bsd.ufl.edu/allaccess and click on the "Opt In" tab or the "View Eligible UF All Access Classes" button.
2. Log in with your GatorLink account.
3. Students are shown a list of classes in which they are enrolled in that are participating in UF All Access with the prices included.
4. Click the Opt-in check box next to the desired class(es).
5. Once you have reviewed your course selections click the Opt-In button.

6. The access code or access instructions are now displayed. Please copy the code and follow the instructions on the course Canvas page for gaining access to your materials.
7. The classes that you opted into will continue to be displayed at https://bsd.ufl.edu/allaccess for up to three weeks after the term has started. Be sure to register the access code before this deadline.

For help with this system, difficulties finding your access code, or issues with an invalid access code, please contact allaccess@bsd.ufl.edu.

If you are waiting on financial aid disbursement and choose not to use the UF All Access program, you can register for temporary Achieve access via the MacMillan site, but you will have to purchase access once the temporary access expires.

Instructions on correctly registering for Achieve will be available on the Canvas course site once the semester has started. **Please wait for these instructions before registering for Achieve**; incorrect registration on Achieve may result in receiving zero points for all Achieve assignments.

For help with Achieve, contact MacMillan Technical Support: (800) 936-6899 (phone) or via their web form at https://macmillan.force.com/macmillanlearning/s/achieve.

**C. Course Website (Canvas)**
All other class material that is not part of the Achieve system – including the syllabus, lectures, assignments, discussions, quizzes, and gradebook – will be posted on the course Canvas website (https://elearning.ufl.edu/). For help with Canvas, call the UF Computing Help Desk at 352-392-4357, or visit the e-Learning support website: http://help.instructure.com/.

**D. Course Fee**
For UF students, the course fee is $27.99. For UFO students, this fee is included in tuition.

**E. Additional Course Supplies**
Some activities will require students to acquire additional inexpensive materials on their own for "kitchen experiments" or simulations. These include: rubbing alcohol, a coffee filter, some utensils, and some dry particulate food (like dry beans or uncooked macaroni) or household items (like paperclips or pennies).

## VI. Course Policies

**A. Time Commitment**
The UF College of Liberal Arts and Sciences assumes that each student will devote on average 3-4 hours per week per credit-hour to each course during the regular semester. Because BSC 2005 is 3 credits, each student should therefore expect to devote an average of 9-12 hours per week to this course in a 15-week semester. This time will not necessarily be evenly distributed; some weeks will have heavier workloads than others.

**B. Attendance**
As BSC2005 is an entirely online asynchronous course, there is no attendance policy as such**. However, students are expected to complete all assigned work by the due date.** Students with pre-planned travel/conflicting activities on the day of a deadline (including student athletes) are responsible for **managing their time wisely and should plan to work ahead when needed** so that they can submit their work before they leave. Excuses such as "we didn't get back from (activity) when planned and I didn't have time" or "my computer crashed half an hour before the deadline and tech support wasn't open" will NOT be accepted as excuses for missed deadlines.

Please see below for policies regarding late work (section VI.E) and absences during scheduled exams (section VI.D).

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies. Click here to read the university attendance policies.

**C. Computing Requirements**

It is the responsibility of the student to maintain a functioning computing system and internet connection. Computing/internet connectivity issues will NOT be acceptable excuses for missed deadlines unless they are brought to the attention of the instructor **at least 24 hours prior to the deadline** and accompanied by the ticket number from technical support. See section VIII for Technical Support contact information. Internet connectivity problems can cause issues with assignment submission, so students should verify that all activities are marked as "complete" and that all files uploaded correctly after they hit the "submit" button.

Microsoft Office programs are required for many of the assignments; these can be accessed by current UF and UFO students through GatorCloud: http://www.it.ufl.edu/gatorcloud/ . Submissions must be made either in an MS Office format (.doc or .docx, .ppt, etc.) or in a generally readable file format (.pdf, .jpg, .txt, etc.); proprietary file formats such as Pages, Keynote, etc. cannot be opened and will not count as an on-time submission. Links to external services such as GoogleDocs will not be accepted in place of a file uploads; the file must be saved into a static format (.pdf, etc.) and uploaded.

**D. Exams**

Any material covered during the lectures or assigned in the reading may be included in the lecture exams. This can include textbook reading and illustrations, the lectures themselves, and any supplemental videos.

Exams will be administered online using Honorlock proctoring software. Students must have a functioning webcam and microphone (integrated or external), and must have the Chrome browser installed. Students will need to show their Gatorlink ID at the beginning of each Honorlock Proctoring section and show both sides of their blank scratch paper (if allowed) to the camera prior to the Exam starting. If students do not meet these requirements, it will be reported as an Honor Code violation, and students found responsible for misconduct will fail the exam. Additional information about taking Honorlock-proctored exams will be available on the course website. Students must take the exam during the specified exam window; **no additional time will be given to complete an exam if you start late.**

Exams will be available for review by appointment following the posting of exam scores on Canvas; specific times for exam review will be announced following each exam. Exams will not be available for review after the semester has ended.

**No make-up exams will be given without prior permission or documentation of illness/emergency on the day of the exam.** Students that will be missing an exam due to a pre-arranged university-approved excused absence (sports, conflicting exam, etc.), or who are living in a time zone that would put the scheduled exam window in the middle of the night, should provide the instructor with documentation of the conflict by a minimum of two weeks in advance, via the surveys in Canvas. Personal travel, work shifts / outside employment, etc., are typically NOT considered approved excused absences, and will not qualify for a make-up exam.

Unavoidable emergency circumstances (e.g. severe illness, hospitalization, or family emergencies) that cause you to miss an exam require you to obtain a letter from a medical professional or the Dean of Students office (https://care.dso.ufl.edu/instructor-notifications/) that specifies the time period for which you are excused from classwork, or other similar documentation, and submit it to your instructors as soon as possible (i.e. within a week, barring extreme circumstances like extended hospitalization).

**E. Late Work / Extensions-Without-Penalty**

All assignments have a due date listed on the schedule at the end of the syllabus, as well as in Canvas. We highly recommend that you submit the assignments by these due dates in order to maintain a good rhythm of learning in the class, and to allow us to provide you with feedback on your assignments in a timely manner. However, we understand that there can be circumstances when students may need more time to complete their assignments. In this course, we accept late work without penalty, as long as it is submitted by the "extension due date". We are providing these extension due dates so you can use them for certain times when you have other exams, sickness, or you just simply need a break and you do not want to think about an assignment.

However, these extension due dates are hard deadlines. Assignments will NOT be accepted for credit *after* the extension due date without an excused absence that covers **the entire period from the original due date until the extension due date.** Documentation of this absence must be submitted to your instructors in the form of a letter from a medical professional or from the Dean of Students office (https://care.dso.ufl.edu/instructor-notifications/) that specifies the dates for which a student was absent from class. As above, this documentation must be submitted to your instructors as soon as possible after the missed deadline (i.e. within a week, barring extreme circumstances like extended hospitalization).

Again, we encourage students to manage their time and to stick to the original scheduled due dates for all assignments whenever possible, and not to wait until the night of the deadline (and ESPECIALLY not to wait until the night of the extension deadline) to complete their assignments!

**F. Assignment Submissions and Resubmissions**

Animations within Achieve are graded on the first attempt; please do not start these quizzes until you are ready to complete them. After completing an Animation or an Adaptive Quiz, please ensure that the score has been posted to the Achieve gradebook. Note that Achieve scores may not sync to the Canvas gradebook immediately, but scores for these activities/quizzes should always be visible in the Achieve gradebook.

All files for written assignments must be submitted through the proper Canvas assignment; **files will not be accepted over e-mail or via Canvas comments**. Files must be saved in the appropriate file format and uploaded to Canvas; links to GoogleDocs or similar services will not be accepted as replacements for file uploads. **It is each student's responsibility to ensure that their work is submitted prior to the deadline. Please double-check your file submissions to make sure they have completed successfully.** Please also double-check that you have submitted the correct file; submitting an incomplete or incorrect file will result in a zero. For assignments within Canvas that require a file upload, these may be resubmitted multiple times; we will only consider the most recent submission. However, once a submission has been graded, **even if it is prior to the deadline or extended deadline**, no further submissions will be considered.

**G. Classroom Behavior**

Please behave with courtesy towards your fellow students and the instructors. This is particularly important in collaborative discussions where you are voicing opinions and commenting on those of other students. Students who persist in being rude or disrespectful will be blocked from future participation (with corresponding loss of points).

Students are encouraged to employ critical thinking and to rely on data and verifiable sources to interrogate all assigned readings and subject matter in this course as a way of determining whether they agree with their classmates and/or their instructor. No lesson is intended to espouse, promote, advance, inculcate, or compel a particular feeling, perception, viewpoint, or belief.

**H. Grammar**

Correct grammar, punctuation, spelling, capitalization and paragraphing should be used in any college level submission, including the discussion boards. (U SHLD NT US TXT SPEAK LKE IDK OR BFF THX ALSO DNT USE ALL CAPS. Ugh.) We will take note of spelling and grammar in all submissions and we will grade

accordingly. If you need help with any aspect of your writing, please visit the UF Writing Studio at http://writing.ufl.edu/writing-studio/ .

**I. Course Materials**

All materials for this course, including but not limited to lectures, quizzes, exams, and worksheets, are the intellectual property of the professor, TAs, or textbook publisher, and are provided solely for the personal use of currently enrolled students. These materials may not be distributed to other students or repositories without express written permission, even after the conclusion of the course at the end of the semester. Doing so will be considered a violation of the UF Honor Code (see below).

## VII. UF Policies

**A. Academic Honesty**

UF students are bound by The Honor Pledge which states:

*"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code.*

On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied:

*"On my honor, I have neither given nor received unauthorized aid in doing this assignment."*

The Conduct Code specifies a number of behaviors that are in violation of this code and the possible sanctions. See the UF Conduct Code website for more information: https://sccr.dso.ufl.edu/process/student-conduct-code/.

Academic dishonesty or other Honor Code violations will not be tolerated, and *each incident* for which a student is determined to be responsible will result in – at minimum – the loss of **a full letter grade** in the course, a zero on the assignment or exam in question, and additional sanctions as appropriate, up to and including a failing grade in the class. In this course, academic dishonesty includes (but is not limited to) collaborating with others on course assignments, quizzes, or exams; utilizing prohibited materials or outside resources during exams; copying the work of other students in whole or in part; allowing other students to copy your work or otherwise sharing completed assignments in person or online (during the semester or in the future); discussing or sharing quiz/exam questions or answers with other students; using advanced automated tools (artificial intelligence or machine learning tools such as ChatGPT) on assignments; and plagiarism, including insufficient paraphrasing.

In short, each student is expected to complete each assignment and exam without substantiative assistance from others, including current or previous students, automated tools, or internet sources (except where specifically required by the assignment, and these must be cited correctly).

All written submissions in this course are run through TurnItIn's anti-plagiarism software, which gives each submission a similarity score, depending on the degree to which it matches the sources in TurnItIn's database, which include web sites, journal articles, and other student submissions. Students can view their own TurnItIn score and similarity report on a submission, generally within a few minutes of submission. Submissions with a high TurnItIn score should be rewritten to better put concepts into your own words, and ungraded assignments may be resubmitted without penalty prior to the deadline (see section VI.G above).

If you have any questions or concerns, please consult with the instructor or TAs in this class.

**B. Accommodations for Students with Disabilities**

Students who will require a classroom accommodation for a disability must contact the Dean of Students Office's Disability Resource Center, in 001 Reid Hall (phone: 352-392-8565). Please see the University of Florida Disability Resources website for more information at: https://disability.ufl.edu. Students should provide their DRC accommodation letter to Dr. Gerlach as soon as possible, ideally by the second week of classes. No accommodations are available to students who lack this documentation, and accommodations are not retroactive (i.e. accommodations can not be made for assignments submitted prior to Dr. Gerlach receiving the letter). It is the policy of the University of Florida that the student, not the instructor, is responsible for arranging accommodations when needed, and instructors cannot provide accommodations beyond those listed on a student's documentation. Once notification is complete, the Disability Resource Center will work with the instructor to accommodate the student.

**C. Drop/Add/Withdrawal**

A student can drop/add this course during the drop/add period with no penalty. After drop/add, a student who drops will receive a W until the date listed in the academic calendar. After that date, the student may be assigned an "E" (fail). Note: it is the responsibility of the STUDENT to withdraw from a course, not the instructor. Failure to participate/complete the class does NOT constitute a drop.

**D. Course Evaluations**

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://my-ufl.bluera.com. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/. We do take student feedback into account when planning future semesters; please let your instructors know if there are particular modules and/or activities that you found helpful or topics that you would have liked to cover in more depth, as well as any that you found less useful.

## VIII. Getting Help

**A. Computing Problems**

For issues with technical difficulties in Canvas, or general computing questions, contact the UF Help Desk:

- (352) 392-HELP
- https://helpdesk.ufl.edu/

For issues with Achieve, please contact MacMillan technical support at:

- (800) 936-6899
- https://macmillan.force.com/macmillanlearning/s/achieve

**B. University Support Services**

College can be a very stressful time in a person's life. Resources are available on campus to help students meet academic goals and solve personal problems that may interfere with their academic performance. If you find that you are having difficulty emotionally or academically, there is substantial support available. See "A Self Help Guide for Students" or contact one of the following services:

Health and Wellness:

1. Dean of Students Office, 202 Peabody Hall, 352-392-1261
2. *U Matter, We Care:* If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team

member will reach out to the student in distress.

3. *Counseling and Wellness Center*: Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.
4. *Student Health Care Center:* Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website.
5. *UF Health Shands Emergency Room / Trauma Center:* For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the UF Health Emergency Room and Trauma Center website.
6. *UF Field and Fork Pantry: The Pantry* is a free resource for members of the UF community to access supplementary food staples. Visit the Field and Fork Pantry website or the pantry at 564 Newell Dr., or call 352-294-3601
7. *University Police Department:* Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).
8. *GatorWell Health Promotion Services:* For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the GatorWell website or call 352-273-4450.

Academic Resources:

1. E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.
2. CLAS Academic Advising Center, Farrior Hall, 100 Fletcher Drive, 352-392-1521
3. Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
4. Library Support: Various ways to receive assistance with respect to using the libraries or finding resources. Call 866-281-6309 or email ask@ufl.libanswers.com for more information.
5. Teaching Center: 1317 Turlington Hall, Call 352-392-2010, or to make a private appointment: 352- 392-6420. Email contact: teaching-center@ufl.edu. General study skills and tutoring.
6. Writing Studio: Daytime (9:30am-3:30pm): 2215 Turlington Hall, 352-846-1138 | Evening (5:00pm-7:00pm): 1545 W University Avenue (Library West, Rm. 339). Help brainstorming, formatting, and writing papers.
7. Academic Complaints: Office of the Ombuds; Visit the Complaint Portal webpage for more information.
8. Enrollment Management Complaints (Registrar, Financial Aid, Admissions): View the Student Complaint Procedure webpage for more information.

**C. Other Questions**

If you have non-tech-support questions about other aspects of the course, check the following sources first to see if it is already answered, **before** e-mailing your instructors:

- Course Syllabus
- Course Orientation Module in Canvas
- Course FAQ page
- Course Announcements (this is the primary means that your instructor has to communicate with you in a timely manner)
- Course Questions Forum Discussion Board

If you still cannot find the answer to your questions:

- If it is a question that others might find useful to know the answer to as well, post it to the discussion board.
- If it is a question specific to you (e.g. account or grade specific), contact Dr. Gerlach and your TA via e-mail.

## IX. General Education

A. **General Education Classification**
BSC 2005 meets the general education requirements for Biological Sciences.

**B. Program Area Objectives**
Biological science courses provide instruction in the basic concepts, theories and terms of the scientific method in the context of the life sciences. Courses focus on major scientific developments and their impacts on society, science and the environment, and the relevant processes that govern biological systems. Students will formulate empirically-testable hypotheses derived from the study of living things, apply logical reasoning skills through scientific criticism and argument, and apply techniques of discovery and critical thinking to evaluate outcomes of experiments.

**C. General Education Student Learning Outcomes**
The general education student learning outcomes (SLOs) describe the knowledge, skills and attitudes that students are expected to acquire while completing a general education course at the University of Florida. The SLOs fall into three areas: content, communication and critical thinking. Note that the subject area objectives (detailed below in section IX.E) describe the context within which the SLOs are achieved.

**1. Content**: Students demonstrate competence in the terminology, concepts, methodologies and theories used within the discipline.

**2. Communication**: Students communicate knowledge, ideas, and reasoning clearly and effectively in written or oral forms appropriate to the discipline.

**3. Critical Thinking**: Students analyze information carefully and logically from multiple perspectives, using discipline specific methods, and develop reasoned solutions to problems.

To assess student performance in meeting these student learning outcomes for this course, students are evaluated by a variety of instruments throughout the course: four exams during the semester (assesses content mastery and critical thinking), weekly learning activities (lecture videos and textbook activities) that assess content knowledge, and weekly graded written assignments and discussion, which assess all three general education SLOs.

D. **General Education in the Context of This Class**
Each module will contain between 1-2 written activities or discussions that are worth 10 and 30 points each; this represents approximately 25% of the final grade. The purpose of these activities is to encourage students to think about Biology outside the framework imposed by the textbook or instructor lectures by giving them the opportunity to develop their own materials to support or reject existing scientific hypotheses. Hypothesis testing is most explicitly addressed in the first module, on the scientific method. Students will gain practice formulating hypotheses and analyzing experimental data throughout the class, in various activities that involve virtual and/or “kitchen” experiments. Activities that include an emphasis on hypothesis testing are marked on the schedule below with ‡.

For each activity, students are provided with specific instructions for completing the activity as well as a grading rubric. The grading rubrics are designed to evaluate the student’s mastery of specific content and their ability to produce bodies of work within the guidelines specified in the instructions. Some examples of activities types include: research using reliable web sources, expository writing, “kitchen experiments”, inquiry activity sheets, and construction of figures and tables.

The course also includes five discussions, in which students collaboratively annotate a reading or video regarding the ethics and application of biology in daily life. Students will be expected to provide several

thoughtful annotations to the material, as well as to respond to the annotations of their classmates, in order to foster critical thinking skills within a learning community.

E. **Course-Specific Objectives and Student Learning Outcomes**

The primary goal of this course is to establish a foundation of knowledge in biology. Fundamental concepts discussed include the process of science, cellular biology and the production and use of energy by those cells, the inheritance of traits via genetics, the processes and patterns of evolution by natural selection and other mechanisms, the diversity and history of life on Earth, and ecology at population, community, and ecosystem levels of organization. An additional course goal is to develop critical thinking skills for development of reasoned thought and for evaluation of life experiences.

Objectives of the course will be achieved if, by its conclusion, students can:

- **Describe the natural world** and the scope of biological science.
- **Articulate and practice the steps of the scientific method**.
- Identify whether explanations/information are scientific, and **evaluate data regarding validity**.
- **Read and interpret a variety of scientific data.**
- Identify the four types of biological macromolecules, and explain their structure and function in living organisms.
- Identify differences in the structure and function between prokaryotes and eukaryotes and between plant and animal cells.
- Identify and explain types of energy transformations, including photosynthesis and respiration.
- Describe the structure of DNA and its replication, and its role in cell division
- Describe the difference between a phenotype and genotype, and solve problems in transmission genetics.
- Discuss the evidence that all living things are descended from a common ancestor and have changed and diversified into species through time, and explain the mechanisms by which this has occurred
- Describe how fossils are formed, how their ages are determined, and how they inform us about the major events in the history of life on Earth.
- Interpret and evaluate phylogenetic trees and use them to distinguish evolutionary predictions
- Describe the characteristics of major groups of prokaryotes (bacteria and archaea), plants, animals (vertebrates and invertebrates), and fungi.
- Explain the forces that regulate populations in natural systems, including the ways that species interactions can influence population dynamics and species distributions
- Explain how energy flows through an ecological community, and how changes to one species can affect other species in its environment.
- Define climate change, describe the supporting evidence, identify its major sources, and describe its potential effects on a variety of living organisms.

## X. Assessments and Grading

**A. Due Dates**

This course is divided into fifteen modules, typically with one due each week of the semester during Fall and Spring semesters. The **learning activities** for each module will be due at **11:59:00 p.m. on the Wednesday** of that module's week, and the **assessments** for each module will be due at **11:59:00 p.m. on the Friday**. There may be exceptions for the first and/or last module of the semester to accommodate add/drop and/or reading days, and for holidays; please see the schedule below for details. EXTENDED DUE DATES

**B. Module Coursework**

Each module will consist of various learning activities to read/watch/complete, and assessments to submit. All required activities and assignments for each unit will be listed on that module's page on Canvas. The various pieces that might be included in a unit are outlined below.

**1. Learning Activities**

**a. Read the chapter(s).**

b. **Learning Animations.** There are typically 3-4 per chapter. Each one involves a short animated infographic to work through, followed by a short quiz (usually 2-3 questions) on the material covered in the infographic. You have two attempts to answer each question; getting a correct answer on the first attempt is worth 100%, getting a correct answer on the second attempt is worth 50%.

c. **Adaptive Quizzes:** In these quizzes, the questions get harder or easier depending on how you do. You're not penalized for getting questions wrong, but you need to reach a certain level of question for each unit. Once you reach that level, you receive full credit (10 pts) for the unit. After that point, you can continue answering questions to review the material without affecting your score.

d. **Lecture videos in PlayPosit:** All lecture videos will have embedded interaction questions in PlayPosit. To receive credit, you must complete every interaction in the video and watch the video until the very end. This tells PlayPosit you are done with the video and sends a grade to Canvas. You have one attempt to answer each question, but you may re-watch the video as a whole for another attempt to re-answer the questions.

**2. Assessments**

a. **Perusall Discussions:** Perusall is a tool that allows students to collaboratively annotate a document or video. Each discussion will have a document to read or a video for you to watch, as well as a discussion prompt to guide your comments and annotations. Perusall grades annotations based on their quality and effectiveness. A high-quality and effective comment deeply engages with points in the readings, stimulates further discussion with other students, offers informative questions or comments, and helps others by addressing their questions or confusions.

b. **Written Submissions.** These are activities that will ask you to do something – some outside research, a kitchen experiment, an online simulation, etc., and then write up and submit your findings / answers to questions to Canvas. Rubrics for each of these assessments are available in Canvas.

**C. Exams**

All exams will be available online through Honorlock during the assigned assembly exam times. Exams will be primarily multiple choice questions, although they may include many choice, matching, fill in the blank, etc. Exams may be curved if needed; details of the curve (if any) will be clearly announced.

**D. Grading Category Weights**

| **Assignment Category** | **Percent of Final Grade** |
|---|---|
| Achieve (Learning animations and adaptive quizzes | 10 |
| Lecture videos in PlayPosit | 15 |
| Assignments and Discussions | 25 |
| Exams | 50 |

**E. Grading**

Grades from written assignments, exams, Playposit, Perusall, and Achieve activities will be posted on

Canvas throughout the semester. It is the responsibility of the student to check their grades on Canvas and to let instructors know about discrepancies **within one week of the grades being posted to Canvas**.

Minimum grade cutoffs are listed in the table below. The scores for the course as a whole will not be curved (i.e. these grade cutoffs will not be lowered) except under extremely rare circumstances (i.e., unless we tell you otherwise these cutoffs will not be lowered, so do not ask). However, these cutoffs will not be raised; in other words, if you receive at least 93% of the possible points, you are guaranteed to earn an A grade. Final scores will be rounded to one decimal place but will NOT be rounded beyond that (e.g., 89.92% will be rounded to 89.9%, not 90%). Being on the borderline of the next highest grade can be frustrating, so please put in the work you need to make sure you earn the grade you want!

| Point Range (%) | Letter Grade |
|---|---|
| ≥ 93.0 | A |
| ≥ 90.0 | A– |
| ≥ 87.0 | B+ |
| ≥ 83.0 | B |
| ≥ 80.0 | B– |
| ≥ 77.0 | C+ |
| ≥ 73.0 | C |
| ≥ 70.0 | C– |
| ≥ 67.0 | D+ |
| ≥ 63.0 | D |
| ≥ 60.0 | D– |
| < 60.0 | E |

Note that the current UF policy for assigning grade points is available at the following undergraduate catalog web page: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx. A minimum grade of C is required for general education credit.

F. **Incomplete ("I"):** If a student has completed the majority of the course work with a passing grade and particular DOCUMENTED circumstances prevent completion of the course in the time allotted, the student may, with the agreement of the instructor, be assigned an "I" pending resolution of the grade. All incompletes MUST be resolved by the end of the following term or the student will receive a grade of "E" (failing).

**G. Extra Credit**

Extra credit assignments *may* be offered at the instructors' discretion; if extra credit is offered, it will be open to all students and will be clearly announced on the course website (i.e. please do not ask). No individualized extra credit will be offered.

**H. Special Treatment**

Please do not request individual special treatment (extended deadlines without a documented excused absence, grade adjustments, extra credit) at the end of the semester; **we do not adjust grades or provide special treatment for individuals for any reason**. Plan to do well on all quizzes and other assignments from the beginning of the semester; if you are having difficulty in the class, please let your instructors know sooner rather than later.

## XI. Disclaimer

This syllabus represents the current plans and objectives; however, schedules, requirements, and assignments may be changed during the course of the semester if the need arises, in order to meet the educational goals of this course. Such changes, which will be communicated clearly via Canvas, are not unusual and should be expected.

## XII. Weekly Course Schedule

| Module | Topic | Learning Activities | | | | Assessments | | |
|---|---|---|---|---|---|---|---|---|
| | | Learning Activities due date* | Chapter ** | PlayPosit Lectures | Achieve | Assessment due date* | Perusall Discussion | Written Assessments |
| 1 | Process of Science | **Thurs 28 Aug** | 1 (pp. 1-23) | What is Biology? (9:25)<br>The Scientific Process (14:24) | Learning Animations Adaptive Quiz | **Fri 29 Aug** | -- | Introduce Yourself Hypothesis Testing‡ |
| 2 | The Molecules of Life | **Weds 03 Sept** | 2, 4.2 (pp. 23-46; 86-89) | Organic Compounds & Biological Molecules (16:52)<br>Water and the Chemistry of Life (10:42)<br>Enzymes and Reactions (9:14) | Learning Animations Adaptive Quiz | **Fri 05 Sept** | Molecular Biology of Cooking | -- |
| 3 | Cell Structure & Function | | 3, M1 (pp. 47-78) | Prokaryotes and Eukaryotes (15:35)<br>Organelle Structure and Function (9:15)<br>Transport Across a Membrane (8:44) | Learning Animations Adaptive Quiz | | -- | Build an Everyday Cell |
| 4 | Energy Flow & Photosynthesis | **Weds 10 Sept** | 5, 6.3-6.5 (pp. 99-118; 126-130) | Energy and Thermodynamics (8:07)<br>Photosynthesis (15:40)<br>Cellular Respiration & Metabolism (8:08) | Learning Animations Adaptive Quiz | **Fri 12 Sept** | Artificial Photosynthesis | Paper Chromatography of Leaf Pigments‡ |
| *** Extension due date for Modules 1-4 is Sunday 14 September at 11:59:00 p.m.** | | | | | | | | |
| **Monday 15 September 8:20 p.m. – 10:10 p.m. EXAM 1 (covers Modules 1-4)** | | | | | | | | |
| 5 | DNA & Genetics | **Weds 17 Sept** | 7, M2, 10.1-10.3 (pp. 141-167; 211-216) | DNA Structure (25:47)<br>Mitosis (5:03)<br>DNA Replication and PCR (20:06) | Learning Animations Adaptive Quiz | **Fri 19 Sept** | DNA Databases and Ethics | Paternity Testing for Baby Birds‡ |
| 6 | Inheritance | **Weds 24 Sept** | 11-12 (pp. 231-290) | Meiosis (10:47)<br>Mendel's Rules of Inheritance (19:22)<br>Sex-Linked Inheritance (15:35)<br>Other Patterns of Dominance (11:52) | Learning Animations Adaptive Quiz | **Fri 26 Sept** | -- | Punnett Squares with Puppies |

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|---|---|---|---|---|---|---|---|---|
| 7 | Natural Selection & Adaptation | **Weds 01 Oct** | 13, M4 (pp. 291-320) | Darwin's Story (34:00)<br>Natural Selection and Adaptation (13:25)<br>Modes of Selection (10:03)<br>Sexual Selection (6:14) | Learning Animations<br>Adaptive Quiz | **Fri 20 June** | -- | Feeding Tools Selection‡ |
| 8 | Species & Speciation | **Weds 08 Oct** | 14 (pp. 321-343) | Allele Frequencies & HWE (13:28)<br>Genetic Drift and Founder Effects (15:43)<br>Species and Speciation (14:42) | Learning Animations<br>Adaptive Quiz | **Weds 18 June** | -- | Evolution in a Fishbowl‡ |
| *** Extension due date for Modules 5-8 is Sunday 12 October at 11:59:00 p.m.** | | | | | | | | |
| **Monday 13 October 8:20 p.m. – 10:10 p.m. EXAM 2 (covers Modules 5-8)** | | | | | | | | |
| 9 | Evidence for Evolution | **Weds 15 Oct** | 15, 16.1 (pp. 344-368) | Fossils and Fossilization (18:09)<br>How Good Is the Fossil Record? (9:28)<br>History of the Earth & Mass Extinctions (15:18)<br>When Whales Walked (6:17) | Learning Animations<br>Adaptive Quiz | **Thurs 16 Oct** | -- | Radioactive Decay Activity<br><br>Timeline to Scale |
| 10 | Life on Earth | **Weds 22 Oct** | 16 (pp. 369-386) | Biodiversity and Biogeography (18:22)<br>Organizing Life's Diversity (19:25)<br>Building a Phylogeny (11:36) | Learning Animations<br>Adaptive Quiz | **Fri 24 Oct** | Why Does Evolution Matter Now? | Phylogeny of Household Objects |
| 11 | Prokaryotes | **Weds 29 Oct** | 17 (pp. 387-407) | Prokaryote Diversity (10:04)<br>Bacteria (11:14)<br>Archaea (7:48)<br>Beneficial and Harmful Prokaryotes (15:48) | Learning Animations<br>Adaptive Quiz | **Fri 31 Oct** | -- | Prokaryote Symbioses |
| 12 | Eukaryotes | **Weds 05 Nov** | 18 (pp. 408-433) | Endosymbiont Theory and Protists (6:32)<br>Plants (9:07)<br>Animals (22:16)<br>Fungi (11:00) | Learning Animations<br>Adaptive Quiz | **Weds 07 Nov** | -- | Eukaryote Diversity Dichotomous Key |
| *** Extension due date for Modules 9-12 is Tuesday 11 November at 11:59:00 p.m.** | | | | | | | | |
| **Wednesday 12 November 8:20 p.m. – 10:10 p.m. EXAM 3 (covers Modules 9-12)** | | | | | | | | |
| 13 | Population Ecology | **Weds 12 Nov** | 20 (pp. 466-484) | Modeling Population Growth (6:58)<br>Regulation & Cycles of Pop. Growth (10:35)<br>Population Structure (5:24) | Learning Animations<br>Adaptive Quiz | **Fri 14 Nov** | -- | Isle Royale Population Simulation‡ |

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|---|---|---|---|---|---|---|---|---|
| | | | | Applications of Population Ecology (8:15) | | | | |
| 14 | Community Ecology | **Weds 19 Nov** | 21 (pp. 485-504) | Food Webs, Niches, & Competition (16:31)<br>Symbioses and Keystone Species (8:53)<br>Pollinators as Keystone Species (13:16)<br>Otters & Orcas: An Alaskan Mystery (5:21) | Learning Animations Adaptive Quiz | **Fri 21 Nov** | -- | Species Interactions |
| **THANKSGIVING BREAK 24-28 November** | | | | | | | | |
| 15 | Ecosystem Ecology & Sustainability | **Weds 03 Dec** | 22, 23 (pp. 505-525; 535-558) | Biomes (15:59)<br>Climate Change & Global Warming (20:31)<br>Sustainability and Footprints (21:32) | Learning Animations Adaptive Quiz | **Weds 03 Dec** | Ecosystems and a Warming Earth News | -- |
| *** Extension due date for Modules 13-15 is Friday 05 December at 11:59:00 p.m.** | | | | | | | | |
| **Saturday 06 December 7:30 a.m. – 9:30 a.m. EXAM 4 (covers Modules 13-15)** | | | | | | | | |

Note: This schedule is subject to change; the most up-to-date listing of the required assignments will be found on the Canvas site.
* All due dates are 11:59:00 p.m. US Eastern time on the date indicated.
** Page numbers are based on the textbook e-book included in Achieve; they may differ from the numbering in print editions.
‡ indicates activities with an emphasis on hypothesis testing.