BSC 2011 – Integrated Principles of Biology II Spring 2024 Syllabus for Pre-health Post-Baccalaureate Class Number 11305

Class Meetings

Monday | (6:15 PM - 7:05 PM) Room: PSY 0129 Wednesday | (6:15 PM - 8:10 PM) Room: PSY 0129

Instructors

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Office Hours: By appointment

Expectations

Each student is solely responsible for reading and following the instructions, guidelines, and schedules in this syllabus and on the course webpage, or announced in class. Not having read the information in this syllabus or in instructor announcements will not constitute an excuse for missing an assignment, exam, or other assessment.

Please set your preferences in Canvas so that you receive timely notifications of course announcements and other information.

Course Resources

BSC Laboratory Courses

The BSC laboratory courses (BSC 2010L and BSC 2011L) are managed separately from the lecture courses. Please see the BSC Website (http://www.bsc.ufl.edu) for more information on the laboratory courses.

Textbook & Online Resources/Homework

A. Textbook

Principles of Life, 3rd Edition, by Hillis, Price, Hill, Hall, & Laskowski W.H. Freeman (publisher)

B. Course Website (Canvas)

Class material including the syllabus, discussion readings, and problem sets, exam results, some lecture slides and other information related to the course will be





posted on the course Canvas website (http://elearning.ufl.edu). You are responsible for **all** announcements made in lecture and/or posted on the course website for this class. For help with Canvas, call the UF Computing Help Desk at 352-392-4357, or visit the Canvas support website: https://elearning.ufl.edu/keep-learning/.

Course Goals and Objectives

BSC2011

The primary goal of this course is to establish a coherent foundation of knowledge in biology and to prepare students for comprehension in advanced biology courses and science in general. Fundamental concepts discussed include the evolution, diversity, and function of photosynthetic life; the evolution, structure, function, and physiology of animals; and the ecology of organisms, populations, communities, biomes, and the biosphere. 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:

- Read and evaluate a phylogenetic tree
- Describe the challenges of life on land and the traits that enabled plants to diversify on land
- Discuss the potential adaptive significance of synapomorphies that define major clades of plants
- Explain how alternation of generations varies in plant lineages and its significance to reproduction
- Diagram the basic components of plant vasculature and characterize their function
- Identify common plant adaptations and show how they are shaped by convergent evolution
- Discuss the role of hormones in plant development and environmental response
- Describe a scientific hypothesis and identify testable predictions that logically follow
- Explain major themes to animal physiology and how it is linked with medicine
- Explain physical principles governing gas exchange in animals in air and water
- Diagram blood flow through the vertebrate circulatory system and describe the major functions of blood vessel types
- Diagram the arrangement of major proteins governing muscle contraction and describe excitation contraction coupling
- Describe the principles of electrical signals in neurons and diagram the organization of the vertebrate nervous system
- Explain principles governing how nitrogen waste is processed in animals and how salt and water balance are maintained in animals
- Describe and explain how climate and topography shape ecological systems
- Identify, compare, and contrast major terrestrial and aquatic biomes
- Explain the forces that regulate populations in natural systems
- Describe how species interactions can influence fitness, population dynamics, and species distribution and can result in evolutionary change
- Explain how communities change over space and time and be able to calculate species diversity
- Describe the challenges faced in conserving species, and explain different conservation approaches that can be used to help preserve biodiversity.
- Explain the mechanisms that underlie animal behavior, and how behavior is shaped by natural selection
- Diagram the global carbon and nitrogen cycle and identify the major stocks and fluxes.

• Identify major anthropogenic changes to the carbon, nitrogen, and phosphorus and describe how these changes have altered ecological systems

General Education Objectives for Biological Sciences

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.

The General Education objectives and the associated Student Learning Outcomes for Biological Sciences are achieved through lectures, in class discussion, questions embedded in lectures, and online activities and exercises. The learning objectives and SLOs are further reinforced by inquiry-based and active-learning exercises in the companion laboratory course, BSC 2011L. In particular, the companion lab expands upon development and testing of specific hypotheses.

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 categories: **content**, **communication** and **critical thinking**. **Every general education course must address all three SLOs**. Note that the subject <u>area objectives</u> (detailed above) describe the context within which the SLOs are achieved

Category	Institutional Definition	Institutional SLO	
CONTENT	Content is knowledge of the concepts, principles, terminology and methodologies used within the discipline.	Students demonstrate competence in the terminology, concepts, methodologies and theories used within the discipline.	
COMMUNICATION	Communication is the development and expression of ideas in written and oral forms.	Students communicate knowledge, ideas, and reasoning clearly and effectively in written or oral forms appropriate to the discipline.	
CRITICAL THINKING	Critical thinking is characterized by the comprehensive analysis of issues, ideas, and evidence before accepting or formulating an opinion or conclusion.	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: three exams during the semester, daily graded clicker questions used to assess comprehension and reasoning, and weekly graded online activities, assessments, and other LaunchPad assignments. Student Learning Outcomes are further assessed in BSC 2011L, the companion lab course. For example, the Communication SLO is assessed in graded written assessments and in oral presentations in the lab. In combination, BSC 2011 and BSC 2011L provide assessments of all categories of the General Education Student Learning Outcomes.

Assessments and Grading

1. Exams

There will be three unit exams, but no cumulative "final" exam. The unit exams will be administered during the normal semester and during the normal class meeting times. Each exam will cover material from lecture, the online discussions, and the assigned reading in the textbook. The exams will not be cumulative. Each exam will be worth 20% of the course grade.

Each student must take the exam during her/his registered section time. Each student must bring her/his Gator ID to class on exam days. No student will be allowed to start an exam after the first student to complete an exam leaves the classroom. All exams and answer sheets will be collected at the end of the exam period. No additional time will be given to complete an exam if you arrive late.

A. Exam Curves

Each exam MAY be curved at the discretion of the instructor.

B. Exam Review

Exams will be available for review by appointment for one week 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.

C. Make-up Exams

No make-up exams will be given without prior permission or documentation of illness. Students that will be missing an exam due to a pre-arranged university-approved excused absence (sports, etc.) should let the instructor know a minimum of two weeks in advance. In case of illness or personal emergency on exam day, students must submit documentation to the Dean of Students office (https://care.dso.ufl.edu/instructor-notifications/) and request an instructor notification to be sent. These notes must be received within five business days after the exam.

A. Setting Up Your Account

You must set up your LaunchPad account through Canvas. Please see the Canvas page in order to do this correctly. For instructions for LaunchPad registration, please see Canvas page LaunchPad Registration Instructions. You must use your Gatorlink (@ufl.edu) email address, which will be your username. Using an email address other than your UFL email address will result in NO CREDIT received for assignments administered through LaunchPad. This cannot be changed after registration; be sure to register correctly.

NOTE: if you already purchased LaunchPad access in a different semester, you can log in using your existing username, which should be your Gatorlink email address. You will then be asked to provide your UFID number. If you have any questions or problems setting up your account, please contact Technical Support (#5, below). Technical support will need a technical support incident ID if you continue to have trouble, so be sure to save that ID when you report your issue.

B. Important information about pace

Some assignments may have a set time limit, so make sure you have time to devote to that assignment before you begin. Once assigned, assignments are available online at all times, from the start of the given unit up until the deadline. It is especially important not to wait until just before the deadlines to complete LaunchPad assignments; problems usually happen at the last minute.

The assignments have been listed in an order that complements the lecture, and we recommend either going over the material for a given chapter:

- before the lecture, which may help you understand the lecture in greater detail, or
- after each lecture to help reinforce the material and prepare for the exam.

You can always go back and re-do the assignments after you have submitted them for a grade, as a study aid.

C. Due Dates

The deadline for assignments is 11:59 p.m. on the day stated on the lecture schedule. All assignments must be completed by the stated due date and time for credit. There are NO make-ups available for the assignments.

3. In-Class Activities

20% of grade, includes worksheets, discussions, practice problems, kinesthetic activities. Students receive full credit upon participation and completion of assignments.

4. Extra Credit

Each instructor will offer exactly 2 points of extra credit, which will apply to the appropriate exam, post curve. The same content and amount will be offered to all students. There will be no extra credit tailored to individual students. There will be NO opportunities to make up extra credit.

5. Grading Summary

Assessment		Available Points	Weight	
	Exam 1	100	20%	
Exams	Exam 2	100	20%	60%
	Exam 3	100	20%	

Assignments		Variable	20%	20%
In-class activities	Unit 1	Variable	20%	20%

All grades will be posted on Canvas (in terms of course points, i.e., the point scheme above), and it is the responsibility of the student to check their grades on Canvas gradebook and make sure they match their grades on LaunchPad. If there is a discrepancy you must let us know within ONE week of the grade being posted on Canvas gradebook.

Minimum grade cutoffs are listed below. Because each exam may be curved individually (see *Exam Curves* above), 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, <u>so do not ask</u>). However, these cutoffs will not be raised; in other words, if you receive 90% of the possible points, you are guaranteed to earn an A grade. Final scores will NOT be rounded (i.e., 89.99% is not 90%).

Point Range (%)	Letter Grade	
≥ 90.00	А	
≥ 86.66	A-	
≥ 83.33	B+	
≥ 80.00	В	
≥ 76.66	В-	
≥ 73.33	C+	
≥ 70	С	
≥ 66.66	C-	
≥ 63.33	D+	
≥ 60	D	
≥ 56.66	D-	
< 56.66	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.

6. Special Treatment

Please do not request individual special treatment regarding grading at the end of the semester; **we do not adjust grades for individuals for any reason nor are grades "rounded up"**. Plan to do well on all exams and other assessments from the beginning of the semester; if you are having difficulty in the class, please let your instructors know *before* the exams rather than after.

Other Considerations

Academic Honesty

All students registered at the University of Florida have agreed to comply with the following statement:

"I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University."

In addition, on all work submitted for credit the following pledge is either required or implied:

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

Any acts of cheating, plagiarism, or other forms of academic dishonesty will result in, at minimum, a 0 grade for the assignment, test, or quiz, and may include additional consequences up to and including a failing grade in the class. Sharing information about tests and quizzes with students in other sections who have not yet taken the exam or quiz, or posting on social media information about tests and quizzes that other sections have not yet taken, is a serious act of academic dishonesty. If you witness any instances of academic dishonesty in this class, please notify the instructor or contact the Student Honor Court (392-1631) or Cheating Hotline (392-6999). For additional information on Academic Honesty, please refer to the University of Florida Student Honor Code and Student Conduct Code at: https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/.

Participation

Students are expected to participate in all classes and are responsible for all material covered during the lecture, including announcements. Students are strongly encouraged to read the assigned chapters before coming to class as this will make it easier to comprehend the lecture material. If you miss class, visit the Canvas site for any lecture slides/notes and course announcements.

There are no points awarded for attendance directly. We understand that some of you may have unique circumstances this semester and are happy to accommodate you as best as we can. Please contact us if you have extenuating circumstances that prevent you from attending class during your lecture time.

Netiquette and Communication Courtesy

All members of the class are expected to follow <u>rules of common courtesy</u> in all email messages, threaded discussions, and chats.

Time Commitment

The UF College of Liberal Arts and Sciences assumes that each student will devote 3-4 hours per week per credit-hour to each course, including time in lectures and labs. Because BSC 201X is 3 credits, each student should therefore expect to devote 9-12 hours per week to this course during a regular semester, or 11-15 hours per week during the summer. A recommended time allocation is below.

Activity	Hours per Week
Lectures	3
Homework	1-2
Textbook Readings	2-3
Review and Study	2-4

If you find yourself spending more than the recommended number of hours per week on average on these activities, discuss this with your course instructor to see if you can refine your study habits. We encourage you to view the Study Skill Videos (https://writing.ufl.edu/writing-studio/video-resources/study-skills/). If you find yourself spending less than the recommended number of hours per week on average, you should recognize that you may have difficulty learning and comprehending the material in this time, and this will probably be reflected in poor performance on the various assessments, causing you to receive a lower overall course grade.

Accommodations for Students with Disabilities

Students who will require a classroom accommodation for a disability must contact the 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/. Note that the student should provide documentation of a requirement for accommodation by the second week of classes, or as soon as possible after any changes are made to their accommodations. No accommodations are available to students who lack this documentation. It is the policy of the University of Florida that the student, not the instructor, is responsible for arranging accommodations when needed. Once notification is complete, the Disability Resource Center will work with the instructor to accommodate the student.

Course Evaluation

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at: https://gatorevals.aa.ufl.edu/. Evaluations are stored and reported in a completely anonymous manner. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

Class Demeanor

Students are expected to arrive to class on time and behave in a manner that is respectful to the instructor and to fellow students. Please avoid the use of cell phones and restrict eating to outside of the classroom. Opinions held by other students should be respected in discussion, and conversations that do not contribute to the discussion should be held at minimum, if at all.

In Class Expectations

In response to COVID-19, the following practices are in place to maintain your learning environment, to enhance the safety of our in-classroom interactions, and to further the health and safety of ourselves, our neighbors, and our loved ones.

• If you are not vaccinated, get vaccinated. Vaccines are readily available at no cost and have been demonstrated to be safe and effective against the COVID-19 virus. Visit this link for details on where to

get your shot, including options that do not require an appointment: https://coronavirus.ufhealth.org/vaccinations/vaccine-availability/. Students who received the first dose of the vaccine somewhere off-campus and/or outside of Gainesville can still receive their second dose on campus.

- You are expected to wear approved face coverings at all times during class and within buildings even if
 you are vaccinated. Please continue to follow healthy habits, including best practices like frequent hand
 washing. Following these practices is our responsibility as Gators.
 - O Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class.
 - Hand sanitizing stations will be located in every classroom.
- If you are sick, stay home and self-quarantine. Please visit the UF Health Screen, Test & Protect website about next steps, retake the questionnaire and schedule your test for no sooner than 24 hours after your symptoms began. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 (or email covid@shcc.ufl.edu) to be evaluated for testing and to receive further instructions about returning to campus. UF Health Screen, Test & Protect offers guidance when you are sick, have been exposed to someone who has tested positive or have tested positive yourself. Visit the UF Health Screen, Test & Protect website for more information.
 - O Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work.
 - o If you are withheld from campus by the Department of Health through Screen, Test & Protect you are not permitted to use any on campus facilities. Students attempting to attend campus activities when withheld from campus will be referred to the Dean of Students Office.
- Continue to regularly visit coronavirus. UFHealth.org and coronavirus. ufl.edu for up-to-date information about COVID-19 and vaccination.

Lecture Schedule

Please note that the following lecture schedule is tentative and subject to change. Please check the Canvas course website for the most up-to-date lecture schedule.

Day	Date	Торіс	Chapter
Mon	1/8/2024	Introduction to BSC2011 & Introduction to Plants	
Wed	1/10/2024	What is a plant; Invasion of land	(14.1, 14.2 background), 19.1, 20.1
Mon	1/15/2024	Holiday	
Wed	1/17/2024	Nonvascular plants; Liverworts and mosses;	20.2
Mon	1/22/2024	Alternation of generations	20.2, 20.3
Wed	1/24/2024	Seed-free vascular plants; Ferns & Lycophytes	20.3
Mon	1/29/2024	Gymnosperms; Angiosperms	20.4, 20.5
Wed	1/31/2024	Angiosperm Form & Function	23

Mon	2/5/2024	The Seed & Reproduction in Seed Plants	20.4, 26
Wed	2/7/2024	Plant Nutrition & Transport	24
Mon	2/12/2024	Plants in Their Environment	27
Wed	2/14/2024	EXAM 1	
Mon	2/19/2024	Fundamentals of Animal Function; Homeostasis and Regulation	28
Wed	2/21/2024	Respiration I	30
Mon	2/26/2024	Respiration II; Circulation I	30
Wed	2/28/2024	Circulation II	30
Mon	3/4/2024	Nervous System I Nervous System II	31
Wed	3/6/2024	Muscles I	33
Mon	3/11/2024	Spring break	
Wed	3/13/2024	Spring break	
Mon	3/18/2024	Muscles II Salt and Water Homeostasis	33, 29, 30
Wed	3/20/2024	Excretion	29, 30
Mon	3/25/2024	EXAM 2	
Wed	3/27/2024	Introduction to Ecology and Climate	38
Mon	4/1/2024	Climate and organism adaptations; Biomes	38
Wed	4/3/2024	Populations I	39
Mon	4/8/2024	Populations II; Species Interactions	39, 40
Wed	4/10/2024	Communities I	41
Mon	4/15/2024	Communities II; Ecological Efficiencies	41
Wed	4/17/2024	Ecosystems I 42	
Mon	4/22/2024	Ecosystems II; Carbon cycle 42	
Wed	4/24/2024	Climate change	
Mon	4/29/2024	EXAM 3	

Course Communications

All email correspondence to course instructors must **originate from your ufl.edu account, have your full name in the body of the email, and contain your course and section number in the subject line**. Emails not meeting these requirements may not be recognized by our email filters, and thus may not be answered.

To facilitate actual discussion, a discussion forum will be set up in Canvas. Any questions regarding the lecture material or the online assignments should be posted there, so that your instructor, or your fellow students will be able to provide answers. Don't be shy about asking questions; after all, if you are confused about the material there will almost certainly be other students with the same questions.

When you have a question about the course material, policies, or assignments, check the following sources first to see if it is already answered, **before** emailing your instructor:

- Course Syllabus
- Canvas Announcements (this is the primary means that your instructors have to communicate with you in a timely manner)
- Canvas Discussion FAQ
- Canvas Discussion General Posts

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 in the Canvas Discussion section.
- If it is regarding a technical problem, please contact the relevant tech support line (see below).

Getting Help & Supplemental Instruction

Getting Help

A. Computing Problems

- For issues with technical difficulties with Canvas, please contact the UF Help Desk at:
 - o learning-support@ufl.edu
 - o (352) 392-4357 select option 2
 - o https://elearning.ufl.edu/keep-learning/

B. Questions about Grades in Canvas assignments

All correspondence regarding the assignments and grades in Canvas must be sent to the instructor (see course front page for contact info).

To facilitate actual discussion, a discussion forum will be set up in Canvas. Any questions regarding the lecture material or the online assignments should be posted there, so that your instructors or your fellow students will be able to provide answers. Don't be shy about asking questions; after all, if you are confused about the material there will almost certainly be other students with the same questions.

C. 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:

- 1. UF Counseling and Wellness Center, Radio Rd Facility, 392-1575
- 2. Dean of Students Office, 202 Peabody Hall, 392-1261
- 3. Career Resource Center, Reitz Union, 392-1601
- 4. CLAS Academic Advising Center, Farrior Hall, 100 Fletcher Drive, 392-1521
- 5. <u>UF Field and Fork Pantry</u>, 564 Newell Dr., 294-3601

Also available is the The U Matter, We Care initiative, which is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

D. Basic Needs

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support – see http://www.umatter.ufl.edu. Please notify the professor if you are comfortable in doing so, and visit The Field and Fork Pantry https://pantry.fieldandfork.ufl.edu for additional resources.

We are commitment to promoting diversity and inclusion based on sex, including sexual orientation and gender identity. For Title IX issues, please visit https://titleix.ufl.edu/ or contact the UF Title IX office at (352) 273-1094 or inform@titleix.ufl.edu.

Supplemental Instruction

In Supplemental Instruction (SI), a trained student peer attends the class and then leads group sessions to focus on the challenging concepts and problems in the course. **SI is purely voluntary**; you can attend as often as you like, provided there is space (this is a first-come, first-served program). The sessions are collaborative, in that you will be working with classmates to better understand the material. The SI leaders will show you effective strategies for studying the course material, which you will have a chance to practice together, and the SI leaders will give you a chance to ask questions or pose your own concerns. Refer to the SI E-Learning site for the locations and schedules of the SI sessions. More information is available at the UF Supplemental Instruction Home Page: https://teachingcenter.ufl.edu/tutoring/study-groups/.