

# BSC 2010 – Integrated Principles of Biology I

Fall 2019 12117 (16CA)

## I. Class Meetings

Classroom: MAT 0005

Times: Monday 3:00 PM-3:50 PM (Period 8)

Wednesday 3:00 PM– 4:55 PM (Periods 8 & 9)

## II. BSC Laboratory Courses

The BSC laboratory course (BSC 2010L) is managed separately from the BSC lecture course. Please read the information available at the BSC Website (<http://www.bsc.ufl.edu>) for more information on the laboratory courses.

## III. Instructor

**Dr. Cherie Bond, PhD**

CLAS Department of Biology

Office: Room 522B Carr

Office Hours: Tues 8 AM-12 PM

After Class on Mondays

E-mail: [bondc@ufl.edu](mailto:bondc@ufl.edu)

## IV. Course Goals and Objectives

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 scientific methods by which we come to know things in science, the chemical composition and processes that make up all life, genetic processes and the means of inheritance of traits, the mechanisms and processes of natural selection, and adaptation and evolution of life on Earth. 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 a scientific hypothesis and identify testable predictions that logically follow
- Compare and contrast the components of prokaryotic and eukaryotic cells and the molecular processes driving cellular structure and functions
- Outline the process and molecular components of key metabolic pathways
- Describe the relationship between genotype and phenotype
- Predict the RNA and protein sequences that will be transcribed and translated from a given gene
- Predict the immediate and long term effects of specific gene mutations
- Discuss the evidence that all living things are descended from a common ancestor and have changed and diversified into species through time.
- Describe the primary driving forces of evolutionary change
- Identify sources of genetic variation in populations and explain how this can be shaped in the presence of natural selection and other evolutionary forces
- Interpret and evaluate phylogenetic trees and use them to distinguish evolutionary predictions
- Outline major fundamental events in the history of life on Earth, including changes to bio-geo-chemical cycles connected with major evolutionary transitions.

## V. 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, interactive “clicker” response systems, 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 2010L. In particular, the companion lab expands upon development and testing of specific hypotheses.

## VI. 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 area objectives (detailed above) describe the context within which the SLOs are achieved

Category	Institutional Definition	Institutional SLO
<b>CONTENT</b>	Content is knowledge of the concepts, principles, terminology and methodologies used within	Students demonstrate competence in the terminology, concepts, methodologies and theories used within the
<b>COMMUNICATION</b>	Communication is the development and expression of	Students communicate knowledge, ideas, and reasoning clearly and effectively in written or oral forms appropriate to the
<b>CRITICAL THINKING</b>	Critical thinking is characterized by the comprehensive analysis of issues, ideas, and evidence before accepting or	Students analyze information carefully and logically from multiple perspectives, using discipline specific methods, and develop reasoned solutions to

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 encourage comprehension and reasoning, and graded on-line activities, exercises and assessments. Student Learning Outcomes are further assessed in BSC 2010L, 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 2010 and BSC 2010L provide assessments of all categories of the General Education Student Learning Outcomes.

## VII. 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.

## VIII. E-mail Communication

All e-mail correspondence to course instructors must **originate from the Inbox function of Canvas, and include your section number**. E-mails not meeting these requirements may not be recognized by our e-mail filters, and thus may not be answered. It is easier to check all student emails if they are in one place.

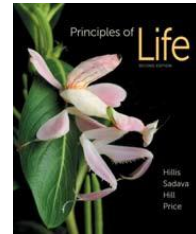
**All correspondence regarding online assignments (*LaunchPad*) must be sent to the Instructor through Canvas email.**

## IX. Course Resources

### A. Textbook

*Principles of Life*, 2<sup>nd</sup> Edition, by Hillis, Sadava, Heller, & Price, Sinauer Associates and W.H. Freeman (publisher)

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. Online Resources and Electronic Textbook

*Launchpad* is an online assignment and tutorial system from the textbook publisher. It is required for this course and includes an e-book with purchase. Each new copy of the *Principles of Life* textbook comes automatically packaged with *Launchpad* and an e-book. If you purchase a used textbook you will still need to purchase access to *Launchpad*. Most students find that purchasing *Launchpad* as a standalone with the included e-book is the most economical option.

Link the student *LaunchPad* account with the Canvas course, so that access to the *LaunchPad* materials is directly through Canvas. It is your responsibility to link your *LaunchPad* account with the Canvas course.

Follow these steps to get started.

- Go to <http://elearning.ufl.edu/> and log in.
- Find the course website.  
In the left sidebar, click on the area of [Macmillan Learning](#).
- You will see the “Privacy Notice and Terms of Use (“Legal Terms”)” if this is the first time you have accessed a *LaunchPad* assignment through Canvas.
- Review the “Privacy Notice and Terms of Use (“Legal Terms”)” and select “[I have read the Legal Terms.](#)”
- Click “[I agree to the Legal Terms.](#)” Before proceeding, determine whether you already have a Macmillan account.
  - If you do not have a Macmillan account, you should create an account first with your **Gatorlink email address**. Then, you can choose your access option.
  - If you have a Macmillan account, you should link your Macmillan account.
  - Once you complete a *LaunchPad* assignment, you should be able to see your grade on Canvas. If not, you should check out whether you linked the account properly.

**For help with *LaunchPad*, contact *LaunchPad* Technical Support:** 1-800-936-6899 (phone) or their online support form at <http://www.macmillanlearning.com/Catalog/techsupport>.

Tech Support Hours (all times EST)

Monday – Thursday, 8:00 AM – 3:00 AM

Friday, 8:00 AM – 12:00 AM

Saturday, 12:00 PM – 8:00 PM

Sunday, 12:00 PM – 3:00 AM

### C. Student Purchase of Course Materials

**IMPORTANT INFO!** Please note that this course will be participating in the **UF All Access** program for the Fall 2019 semester. Students will have two options to gain access to *LaunchPad* for *Principles of Life*

(which also includes the eBook text with study tools) when classes begin in August: Students will have the choice to “opt-in” for a limited time to receive access to *LaunchPad* 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 a stand-alone code through the UF Bookstore. Both options provide access to the same materials. The following link will take you to where you can “opt-in” to receive discounted course materials once logged in with your Gatorlink credentials.

<https://www.bsd.ufl.edu/G1CO/IPay1f/start.aspx?TASK=INCLUDED>

	Author	Title	ISBN/EAN	Edition	New	Used
UF All Access	Hillis	Prin of Life (24m) UF All Access	9781319147136	2 <sup>nd</sup>	\$97.50	N/A
Loose Leaf Text	Hillis	Prin of Life (Print)	9781319147129	2 <sup>nd</sup>	\$37.50	N/A
Study Guide	Hillis	Study Guide for Prin of Life	9781464184758	2 <sup>nd</sup>	\$48.25	\$36.25

#### D. Course Website (e-Learning)

Class material including the syllabus, exam results, some lecture slides, and other information related to the course will be posted on the course e-Learning website (<http://elearning.ufl.edu/>). The course is found under “e-Learning in Canvas”. You are responsible for **all** announcements made in lecture and/or posted on the course website for this class. For help with e-Learning, call the UF Computing Help Desk at 352-392-4357, or visit the e-Learning support website: <http://helpdesk.ufl.edu/>.

## X. Online Instruction Information

As part of BSC 2010, you are required to complete online assignments that will account for 35% of your overall grade. Online assignments will be completed online in the *LaunchPad* website. Always access LaunchPad through Canvas to ensure proper synchronization of gradebooks.

A schedule will be posted on e-Learning with the due dates for each assignment. **All assignments must be completed by the stated due date and time for credit. Extensions will NOT be given because of technical or personal issues that occur within 24 hours of the assignment deadline.** Some assignments may have a set time limit, so make sure you have time to devote to that assignment before you begin. You are expected to work by yourself on the assignments and cheating will not be tolerated.

Note that all due dates for assignments are clearly posted on the *LaunchPad* Assignments tab and reflect the most up-to-date information. On this page you can also see your grade on an assignment and its status (e.g., complete, or due in x days). Also, there are many other resources available on LaunchPad to help you study material from your textbook, such as Diagnostic quizzes, Flashcards, Interactive chapter summaries, etc. Items that are NOT on the assignments page will not be graded, but we still strongly encourage you to use them to help you study.

**If you have technical difficulties, please contact *LaunchPad* Technical Support: 1-800-936-6899 (phone) or their online support form at <https://community.macmillan.com/community/digital-product-support/college-students-support-community>**

**If there is a technical problem with accessing *LaunchPad* or a particular assignment within *LaunchPad*, you must contact *LaunchPad* technical support FIRST. *LaunchPad* tech support is the only one who can fix technical issues with the site.** Then, contact the Online Instructor at least 48 hours prior to the deadline, so appropriate steps can be taken to fix the issue and appropriate extensions can be given if necessary.

#### Grading of Online Exercises:

The online exercises account for 35% of the total course points. There are several different types of assignments that

students will have to complete. For any quizzes, you will be graded based on the number of questions answered correctly out of the total number of questions. For all other assignment types (activities, tutorials, etc.) you will receive full credit upon completion. There are no make-ups available for *LaunchPad* assignments. Once assigned, assignments are available online up until the deadlines. Because they are assigned far in advance of the due date, *LaunchPad* assignments that are not completed by the due date CANNOT BE MADE UP, with one exception: If there is a technical problem with accessing *LaunchPad* or a particular assignment within *LaunchPad*, you must contact *LaunchPad* technical support AND the instructor at least 48 hours prior to the deadline, so appropriate steps can be taken to fix the issue and appropriate extensions can be given if necessary. Thus, check early that you can access the assignments. You will not be granted an extension for technical problems, if you do not contact the instructor at least 48 hours before the deadline.

***LaunchPad* grades will be transferred to the UF E-learning website, but will be viewable at any time on the *LaunchPad* website.**

## XI. Assessments and Grading

### A. 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 10% 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.

Exams MAY be curved, at the instructor's discretion, using the following approach: The top 3% of the scores in the class will be averaged, and the difference from 100 points will be added to each individual exam score.

Exams will be available for review during office hours after all students have taken the exam. Exams will *not* be available for review after the semester has ended.

*Make-up Exams:* No make-up exams will be given without prior permission or documentation of illness. Students who 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**. These students may be required to take the make-up exam *before* the scheduled in-class exam.

In case of illness on exam day, a letter from the student's primary care provider will be required in order to receive an accommodation email from the Dean of Students Office (P202 Peabody Hall).

This letter must state that the student was unable to complete the exam on the scheduled date (i.e., a letter stating only that the student was seen in a clinic is not sufficient). A personal emergency that forces a student to miss an exam also requires a note from the Dean of Students. These notes must be received within five business days after the exam. Make up exams may be short-answer or essay format.

### B. Online Assignments

Students will receive up to 35% of the total course points for participation in the online *LaunchPad* Learning Curve exercises (20%), and for performance on online assessments via *LaunchPad* Summative Chapter Quizzes (15%).

There are **NO** make-ups available for *LaunchPad* assignments. Once assigned, assignments are available online continuously until the deadlines. Because a full week (or more) is dedicated to the completion of each *LaunchPad* assignment, documentation of illness or a personal matter must be provided for at least five of the seven days of the week of the assignment's deadline for accommodations to be made. It is especially important to not wait until just before the deadlines to complete *LaunchPad* assignments.

**C. Evolution Research Paper:** Students will pick an organism, investigate its evolutionary development, and write a 1500 word scientific research paper, specifying the evolutionary changes and selective mechanisms involved. Detailed instructions on the content of the paper and a grading rubric will be provided. The final paper grade includes the final paper (100 pt) and the scaffolding assignments associated with the paper: 10 pts for plagiarism certificate, 20 pts for annotated bibliography, & 20 pts for first draft, for a total of 150 points towards the final grade in the course.

**D. In-class Activities:** 20% of grade, includes worksheets, discussions, practice problems, kinesthetic activities. Students receive full credit upon participation and completion of assignments. In-class activities cannot be made up without approved documentation; plan to attend every class.

**E. Extra Credit**

Extra Credit is built into exams and some assignments. No additional extra credit assignments are available.

**F. Grading**

Assignment	Points	Point Totals	% of Grade	% Totals
LP-Learning Curve	10 each	200	~1% each	20%
LP-Chapter Quizzes	10 each	150	~1% each	15%
In-class Activities	10 each	200	~1% each	20%
Evolution Paper	150	150	15%	15%
Exam I	100	100	10%	10%
Exam II	100	100	10%	10%
Exam III	100	100	10%	10%
<b>Course total</b>		<b>1000</b>		<b>100%</b>

All grades will be posted in Canvas and it is the responsibility of the student to check their grades and make sure they match their grades on *LaunchPad*. If there is a discrepancy you must let the instructor know within ONE week of the grade being posted on eLearning. Note that it can sometimes take a couple hours for grades to transfer from LaunchPad to Canvas.

Minimum grade cutoffs are listed below. Because each exam may be curved individually (see section IX-A, above), and since exams and many assignments have extra credit points available, the scores for the course as a whole will not be curved (i.e. these grade cutoffs will not be lowered). 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	A
≥ 86.66	A–
≥ 83.33	B+
≥ 80.00	B
≥ 76.66	B–
≥ 73.33	C+
≥ 70	C
≥ 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>.

**G. 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..**

### XIII. 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."*

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 Academic Honesty Guidelines at: <https://catalog.ufl.edu/ugrad/current/advising/info/student-honor-code.aspx#honesty>.

### XIV. Attendance

Students are expected to attend every class. We will be doing a number of group assignments in class, including: model-building, worksheets, workshops, problem sets, etc. Student participation in these activities earns full points and counts towards a significant proportion (20%) of the grade in the course, therefore missing class is not recommended. Students who choose to miss class will not benefit from these activities and they cannot be made up without DSO verification of illness or personal emergency. Students are strongly encouraged to read the assigned chapters before coming to class, as this will make it easier to comprehend the lecture material and participate in activities.

### XV. Time Commitment

The UF College of Liberal Arts and Sciences expects that each student will devote 3-4 hours per week per credit-hour to each course, including time in lectures and labs. Because BSC 2010 is 3 credits, each student should therefore expect to devote 9-12 hours per week to this course. A recommended time allocation is below.

Activity	Hours per Week
Lectures	3
Online Exercises	2-3
Textbook Readings	2-3
Review and Study	2-4

If you find yourself spending more than 12 hours per week on average on these activities, discuss this with your course instructor to see if you can refine your study habits. If you find yourself spending less than 9 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.

### XVI. Conduct in Class

Please be courteous and do not talk, text, or play music or videos during lecture. This can be distracting to other students and the instructor. Use of electronic devices in class to take notes or otherwise participate in classroom activities is approved. Approved electronic devices are laptop computers, cell phones, smart phones, tablets, and voice recording devices. Other uses of these devices or the use of unapproved devices will be considered disruptive. Unapproved electronic devices include video recorders, digital cameras and MP3 players. Students who use unapproved devices in class will be considered disruptive to the learning environment and may be asked to leave. **Multiple disruptions will be considered grounds for the assignment of a failing grade in the course.**

## XVII. Accommodations for Students with Disabilities

Students who will require a classroom accommodation for a disability must contact the Dean of Students Office of Disability Resources, in Peabody 202 (phone: 352-392-1261). Please see the University of Florida Disability Resources website for more information at: <http://www.dso.ufl.edu/drc/>. Note that the student should provide documentation of a requirement for accommodation as soon as possible in the semester, so that arrangements can be made with the DRC. 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 Dean of Students Office of Disability Resources will work with the instructor to accommodate the student.

## XVIII. Counseling Center

Many students experience test anxiety and other stress related problems. “[A Self Help Guide for Students](#)” as well as a diverse array of support systems are available through the UF Counseling and Wellness Center (3190 Radio Road, 392-1575, <http://www.counsel.ufl.edu/>).

Your well-being is important to the University of Florida. The U Matter, We Care initiative 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](mailto: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.

## XIX. Course Evaluations

To improve the teaching and learning of this important course, students are required to submit a teaching evaluation for each instructor electronically. 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://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

## XX. Lecture Schedule

Lecture topics for this course are listed below. This is a tentative schedule; the dates and coverage of specific topics are subject to change at the instructor’s discretion.

Day/Date	Lecture #	Topic	Chapter
		<b>Unit 1: Cells</b>	
Aug 21, Wed	1	Introduction, Scientific Method	1
Aug 26, Mon	2	Atoms, Molecules, & Water	2
Aug 28, Wed	3/4	Biological Macromolecules	2/3
Sept 2, Mon		No Class – LABOR DAY	
Sept 4, Wed	5/6	Prokaryotic and Eukaryotic Cell Structure	4
Sep 9, Mon	7	Cell Membranes and Signaling	5
Sep 11, Wed	8	Metabolism, Cellular Respiration	6



Sep 16, Mon	7	Cellular Respiration	6
Sep 18, Wed	10	Photosynthesis	6
Sep 23, Mon		Review	
Sept 25, Wed		<b>EXAM 1 – In Class</b>	
		<b>Unit 2: Genetics</b>	
Sept 30, Mon	11	Cell Cycle, Mitosis	7
Oct 2, Wed	12	Meiosis	7
Oct 7, Mon	13A	Mendelian Genetics Monohybrid	8
Oct 9, Wed	13B/14	Mendelian Genetics – Dihybrid, Extensions to Mendel	8
Oct 14, Mon	15	Chromosomes and Linkage	8
Oct 16, Wed	16/17	DNA structure; DNA Replication	9
Oct 21, Mon	18	Mutation & Repair	9
Oct 23, Wed	19	Transcription; Translation	10
Oct 28, Mon	20	Gene Regulation & Epigenetics	11
Oct 30, Wed		<b>EXAM 2 – In Class</b>	
		<b>Unit 3: Evolution</b>	
Nov 4, Mon	21	Introduction to Evolution	15
Nov 6, Wed	22	Natural Selection	15
Nov 11, Mon		<b>No Class – Veteran’s Day</b>	
Nov 13, Wed	23	Microevolution: Hardy-Weinberg Equilibrium	15
Nov 18, Mon	24	Phylogenies	16
Nov 20, Wed	25	Macroevolution: Speciation	17
Nov 25, Mon	26	The History of Life on Earth	18
Nov 27, Wed		<b>NO CLASS – Thanksgiving</b>	
Dec 2, Mon	28	Review – <b>Evolution Papers Due</b>	
Dec 4, Wed		<b>EXAM 3 – In Class</b>	