

BSC 2011 – Integrated Principles of Biology II

Syllabus for Pre-health Post-Baccalaureate

Class Number 12000

Spring 2019

I. Class Meetings

Keene-Flint Hall 0121

M | Period 11 (6:15 PM - 7:05 PM)

W | Period 11 - E1 (6:15 PM - 8:10 PM)

First day of classes: Monday, January 2, 2019**Last day of classes:** Wednesday, April 24, 2019**Final Exam:** None

Online Exercises and Tutorials are continuously available; assignments will be posted regularly.

II. BSC Laboratory Courses

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

III. Instructors**Norman Douglas, Ph.D.**

Department of Biology Office: 618a Carr

Office Hours: By appointment

Phone: 352-294-2842

Email: nadouglas@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
- 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
- Describe the mechanisms by which plants move water and nutrients through the plant body.
- Explain how alternation of generations varies among plant lineages and its significance in plant reproduction
- Discuss the role of hormones in plant development and environmental response

- 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
- 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 be able to calculate species diversity
- 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

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 2011L. 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 |
|--------------------------|---|---|
| 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 encourage comprehension and reasoning, and graded on-line activities, exercises and assessments. 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.

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.

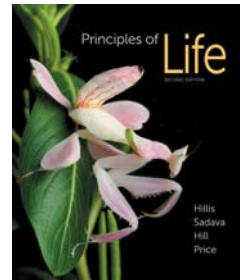
All correspondence regarding the online assignments (*LaunchPad*) must be sent to the Instructor through **Canvas email.**

IX. Course Resources

A. Textbook

Principles of Life, 2nd 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 assignments 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 Spring 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 January: 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 standalone 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 | 2nd | \$97.50 | N/A |
| Loose Leaf Text | Hillis | Prin of Life (Print Upgrade) | 9781319147129 | 2nd | \$37.50 | N/A |
| Access Code | Hillis | Prin of Life (24m Launchpad Access) | 9781464184734 | 2nd | \$124.50 | N/A |
| Study Guide | Hillis | Study Guide for Prin of Life | 9781464184758 | 2nd | \$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 2011, you are required to complete online assignments that will account for 35% of your overall grade. Online assignments will be completed online at the *LaunchPad* website.

See instructions above (B. Online Resources and Electronic Textbook) on how to access the *LaunchPad* website. 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.** Most assignments will also 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 on your highest quiz score out of 2 attempts. 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 at all times 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.

Each exam MAY be curved 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 by appointment for one week after the exam date; specific times for exam review will be announced following each 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. In-class Activities:** 20% of grade, includes worksheets, discussions, practice problems, kinesthetic activities. Students receive full credit upon participation and completion of assignments.
- D. Extra Credit**
No mechanisms for extra credit are available.
- E. 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% |
| Exam I | 100 | 100 | 10% | 15% |
| Exam II | 100 | 100 | 10% | 15% |
| Exam III | 100 | 100 | 10% | 15% |
| Course total | | 1000 | | 100% |

All grades will be posted on e-Learning (in terms of course points, i.e., the point scheme above), and it is the responsibility of the student to check their grades on e-Learning 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.

Minimum grade cutoffs are listed below. Because each exam is curved individually (see section IX-A, 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). 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>.

F. 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**. 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.

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

Attendance is not required, however 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 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. If you miss class, visit the e-Learning site for any lecture PowerPoints and course announcements.

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 2011 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.

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 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. 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.

| Day/Date | Lecture # | Topic | Chapter |
|------------|-----------|---|---------|
| Mon 7-Jan | 1 | Introduction to BSC2011 & Plants | |
| Wed 9-Jan | 2/3 | Phylogenetics and plant classification; Endosymbiosis, other "plants", invasion of land | 19, 20 |
| Mon 14-Jan | 4 | Nonvascular plants | 21 |
| Wed 16-Jan | 5/6 | Liverworts and mosses; Alternation of generations | 21 |
| Mon 21-Jan | | MLK DAY | |
| Wed 23-Jan | 7/8 | Seed-free vascular plants - structures, tissues; Ferns & Lycophytes | 21, 24 |
| Mon 28-Jan | 9 | Transpiration | 25 |

| | | | |
|------------|-------|--|--------|
| Wed 30-Jan | 10/11 | Gymnosperms; Angiosperms - Reproduction, Flower structure, Pollination | 21 |
| Mon 4-Feb | 12 | What is a Seed? | 21, 27 |
| Wed 6-Feb | 13/14 | Plant adaptations; Flowering plant physiology | 25 |
| Mon 11-Feb | 15 | Plant growth and development | 26 |
| Wed 13-Feb | 16/17 | Fundamentals of Animal Function; Breathing | 29, 34 |
| Mon 18-Feb | | EXAM 1 | |
| Wed 20-Feb | 18/19 | Breathing; Neurons | 34, 31 |
| Mon 25-Feb | 20 | Neurons | 31 |
| Wed 27-Feb | 21/22 | Circulation; Circulation | 32 |
| Mon 4-Mar | | SPRING BREAK | |
| Wed 6-Mar | | SPRING BREAK | |
| Mon 11-Mar | 23 | Muscles | 33 |
| Wed 13-Mar | 24/25 | Muscles; Waste excretion and salt and water homeostasis | 33, 36 |
| Mon 18-Mar | 26 | Waste excretion and salt and water homeostasis | 36 |
| Wed 20-Mar | 27/28 | Introduction to Ecology and Climate | 41 |
| Mon 25-Mar | | EXAM 2 | |
| Wed 27-Mar | 29/30 | Climate and organism adaptations; Biomes | 41 |
| Mon 1-Apr | 31 | Populations I | 42 |
| Wed 3-Apr | 32/33 | Populations II; Species Interactions | 42/43 |
| Mon 8-Apr | 34 | Communities I | 44 |
| Wed 10-Apr | 35/36 | Communities II; Ecological Efficiencies | 44 |
| Mon 15-Apr | 37 | Ecosystems I | 45 |
| Wed 17-Apr | 38/39 | Ecosystems II; Carbon cycle | 45 |
| Mon 22-Apr | 40 | Climate change | 45 |
| Wed 24-Apr | | EXAM 3 | |