

# **Integrated Principles of Biology II**

## **BSC 2011, Section 40, Spring 2023 Syllabus**

**Steve C. Schenk, Associate Professor of Biological Science**

### **Course Description**

This course explores the origin of life on our planet and examines the process of evolution that shaped the vast diversity of life forms such as prokaryotes, algae, fungi, plants, animals that occupy/occupied the planet throughout its vast history. Completion of BSC2010 is recommended before taking this course. To receive lab credit, students should also register for BSC2011L. This course is intended for science majors.

Course Credit Hours: 3

Prerequisites / Corequisites: BSC 2010

### **Course Time and Location**

Tuesdays and Thursdays 8:00am – 9:15am

Citrus Campus, Building C3, Room 204

### **Required Course Materials**

Textbook: *Biology (2<sup>nd</sup> edition)* by Openstax College

ISBN Number: 9781947172517

NOTE: A PDF copy of this book can be downloaded within Canvas or at the following link:

<https://openstax.org/details/books/biology-2e>

A folder or binder in which to keep all of your other course materials. All homework and support materials will be provided through Canvas. You are expected to have all completed note-taking assignments with you in class during every class period.

### **Instructor Contact Information**

Office: Citrus Campus, Building C3, Room 208G

Office Phone: 352-746-6721 ext 6133

CF Email: [schenks@cf.edu](mailto:schenks@cf.edu)

Please use Canvas email – not my CF email listed above – as your primary way to communicate with me on classroom issues. I will always reply to emails as quickly as I can, but do not expect rapid responses to emails sent on weekday evenings or over weekends, as I frequently have family activities scheduled at those times. If you do need to contact me through my CF email address, please send your message using your Patriots Mail account.

### **Instructor Office Hours**

Mondays: 9:30am – 12:30pm

Tuesdays: 9:30am – 10:45am and 12:30pm – 2:00pm

Wednesdays: 11:30am – 12:30pm

Thursdays: 9:30am – 10:45am and 2:30pm – 4:30pm

I can be available to meet with you at other times by appointment. Please request alternate times for an appointment and I will do my best to accommodate you. If you cannot attend in-person during scheduled office hours, I can set up one-on-one Zoom meetings to meet with you at those times remotely. If you would like to meet through Zoom, please do not set up a Zoom session. I need to arrange the session so I can protect your privacy.

## **Instructional Philosophy / Instructor Expectations**

This course exists to prepare students to enter bachelor degree programs in the natural sciences. These programs lead to a variety of career tracks, including research science, medicine, pharmacology, veterinary medicine, agricultural science, and a host of other bioscience fields.

My goal is to prepare students at the highest level of competence that they can follow the academic track of their choice, but also so that they navigate that track successfully with the best chance to be admitted to graduate programs or the bioscience workforce. To this end, I emphasize not only the acquisition of knowledge but also the development of strong analytical skills. I have high standards, but I also provide extensive support to help students achieve those standards.

Given the large amount of material processed in this course, students should plan to spend a minimum of 8 – 12 hours per week working on this course (not including class time) if they wish to earn a grade of A or B.

## **Institutional Student Learning Outcomes**

The following list offers students a consistent way to see how CF's global learning outcomes are assessed in each class. This is for information purposes only and does not change the grading system used in this class. Only those learning outcomes relevant to this course are included below.

### **Critical Reasoning:**

The student will reflect, analyze, synthesize, and apply critical thinking.

1. Accurately interpret evidence, statements, graphics, questions, etc.

How Measured: Homework, Exam

2. Identify important arguments.

How Measured: Homework, Exam

4. Draw valid conclusions.

How Measured: Homework, Exam, Quiz

5. Justify and explain assumptions and reasons.

How Measured: Classroom Activity, Exam

### **Quantitative and Analytical Reasoning:**

The student will understand and apply mathematical and scientific principles and methods.

1. Perform accurate computations using order of operations with and without technology.

How Measured: Classroom Activity, Homework, Exam

2. Identify and organize relevant information and complete the solution of an applied problem.

How Measured: Classroom Activity, Homework, Exam

3. Interpret and communicate understanding of visual representations of data.

How Measured: Classroom Activity, Exam

## Student Assessment

This course will be graded out of 1000 total possible points. Grades will be assigned as follows.

A = 900 to 1000 points

C+ = 770 to 799 points

D = 600 to 699 points

B+ = 870 to 899 points

C = 700 to 769 points

F = 0 to 599 points

B = 800 to 869 points

I allow partial points on most assignments. At the end of the course, I will round your final grade to the nearest whole number of points. For example, a final grade of 899.4/1000 will be rounded to 899 points, which is a B+.

I reserve the right to modify the cut-offs for particular letter grades in response to statistical patterns in grade distributions. When I do this (which is rare!), it will never be because of a student request and it will apply equally to all students. I will never raise the minimum requirement for any letter grade.

### **Homework (Directed-Note-Taking) (15% of the course grade)**

This is a 15-week course and there is a directed-note-taking assignment due every week, including the first week. These take the form of Worksheets which guide you in your note-taking and allow you to document that you are coming to class prepared. To complete each note-taking assignment, print or download the Worksheet from the Modules page in Canvas; each Worksheet is in its own module. Each Worksheet will give you something to do (e.g. read from the textbook or a handout, watch a video lecture) followed by a series of questions to answer. By answering the questions as you do the reading or watch the video, you are taking notes on that subject. All material that will be tested in this course will come directly from notes you take in completing your worksheets.

After completing your assignment, you will need to digitally submit evidence of completion into Canvas. This can be done one of two ways.

- If you write directly on printed Worksheets as you take notes or if you take notes on loose-leaf paper or in a notebook, take photographs of your completed work and upload them to Canvas using the Student Canvas App on your phone.
- If you download the Worksheet file and complete it digitally, upload your saved PDF, DOC, or similar file into Canvas.

Submitted worksheets are graded on two criteria.

(1) Is the worksheet at least 90% complete? If it is not, it will receive no credit. If it is 90% or more complete...

(2) ...it will be graded for being submitted on-time according to the following rubric.

Submitted on-time = 10.0 / 10 points

Submitted 2 to 4 days late = 6.5 / 10 points

Submitted up to 1 day late = 8.5 / 10 points

Submitted 4 to 7 days late = 5.0 / 10 points

Submitted 1 to 2 days late = 7.5 / 10 points

Submitted 7+ days late = 2.5 / 10 points

Note that with exceptions clearly spelled out in the course calendar, worksheet submissions are due no later than 12:00pm (noon) on Sundays. Worksheets will not be accepted for credit after 11:59pm on Friday, April 28, 2023.

Due to the structure of the 2023 Spring Academic Calendar, there will be 14 Worksheets assigned at 10-points each. A 15<sup>th</sup> worksheet grade will take the form of the average grade of your 13-highest scoring worksheets for a final grade out of 150-points.

### **On-Line Syllabus Quiz & Attendance (4% of the course grade)**

During the first week of class, all students are required to complete a 15-point Syllabus Check Quiz in Canvas. This quiz has no time limit, is open-syllabus, and can be taken as many times as you like. However, you are required to earn a perfect score on this quiz. Any students who have not earned a perfect score of 15/15 on this quiz by 11:59pm on Wednesday, January 18 will receive a grade of 0/15. Students who do not complete this quiz will also be marked as not-in-attendance for financial aid purposes.

Beginning with the second class-meeting and ending with the class meeting for Examination #3, students will be assigned 1-point for being in attendance. There will be an Attendance Log provided at the start of the class for 15-minutes and the last 15-minutes of class. Students are expected to sign-in and out each period.

- Each day one which you sign-in and sign-out you will earn 1-attendance point.
- Each day on which you sign-in or out but not both you will earn 0.5-attendance points.
- Each day on which you neither sign-in nor sign-out you will earn 0-attendance points.

Note that the full attendance grade is out of 25-points, but there are 29-days receiving an attendance grade. This means that you can miss up to three classes without having your attendance grade reduced. Any student who attends more than 25-classes will receive bonus attendance points up to 29/25. Falsifying the sign-in sheet will result in a 10-point attendance grade penalty.

### **Examinations (78.0% of the course grade)**

The bulk of your course grade will be determined by three major examinations. Exams will consist of short answer format, fill-in-the-blank, labeling, drawing, and justified multiple-choice questions. All exams are cumulative and closed-note/closed-book. The three exams will be administered in-class on the following dates:

#### **Examination #1 – Thursday, February 16 (200-points)**

- 200-points covering topics from Worksheets #1 - #5 (Evolution & Introduction to Ecology)

#### **Examination #2 – Tuesday, March 28 (260-points)**

- 200-points covering topics from Worksheets #6 - #9 (Ecology & Plant Physiology)
- 60-points covering topics from Worksheets #1 - #5

#### **Examination #3 – Tuesday, May 2 (320-points) (This is the Tuesday of Final Exam Week)**

- 200-points covering topics from Worksheets #10 - #14 (Animal Physiology)
- 120-points covering topics from Worksheets #1 - #9

I cannot give you the number of exam questions in advance. Given the format of my exams and the fact that some questions take more time to answer than others, the actual question count varies from one exam to the next. However, every exam is designed to be completed by a prepared student in under 75-minutes, and I always test-drive my exams to be sure this is plausible.

## **Sample Question Sets (SQS) and Instructor's Commentaries (IC)**

To help you prepare for your exams and better learn the material, you will be given access each week to two extra handouts.

- **Sample Question Sets (SQS)** – To help you practice for each exam, you will be given a set of practice questions each week in a PDF file (the SQS). Each SQS will unlock at the time the worksheet is due, which means you will have access to practice exam questions before our first class meeting each week.
- **Instructor Commentaries (IC)** – To help you double-check your homework notes and to check answers to practice questions in the SQS, an IC will unlock at the end of our last class meeting each week. The IC for each worksheet and SQS will summarize major topics, articulate major definitions, explain critical concepts, and talk about how to answer particular types of exam questions.

Make sure you are using these two documents every week!

## **Outside Activity Points (OAPs) (3% of the course grade)**

Of your 1000-points in this course, 30-points must be earned through completing activities outside the classroom. To earn these points, you must participate in workshops, attend film viewings and discussions related to class, or engage in other activities that relate to your coursework. Participation in any approved activity earns you 7.5-points, meaning that you need to participate in 4 activities to earn all 30-points. These 30-points are not extra credit. Failure to earn OAPs will result in a grade of 30. It is your responsibility to remember to engage in these activities and take advantage of opportunities announced in class.

The first OAP opportunity of the semester will be a workshop on Wednesday, January 18 from 12:30pm – 1:15pm. This workshop – Overcoming the COVID Hangover – will be a 45-minute conversation about college success strategies. Students are encouraged to attend the session in-person (room TBD), but there will also be a Zoom option for attendance. (If you exercise the Zoom option, you MUST have a functioning webcam; you must be visible on the webcam throughout the session to receive credit.) Students in attendance through either means will earn 7.5-OAPs by writing a very short (100-words or less) response that will be assigned at the end of the workshop.

Also, every student who has a one-on-one chat with Prof. S in his office lasting at least 10-minutes by February 3 will also earn 7.5-OAPs.

Other opportunities to earn OAPs will be offered as the semester progresses. These opportunities will include...

- Attending approved on-campus presentations or workshops.
- Attending a screening of a TV show or film and participating in a discussion about working in biology or health science afterward. I schedule a few of these each semester.
- Watching select videos and writing short reflection papers on what was learned from them.

Students can also earn OAPs by documenting work in a science or health related field. If this applies to you, you need to talk to Prof. S directly. Students are also actively encouraged to create their own activities to earn OAPs. In past semesters, students have earned OAPs by participating in independent volunteer projects, documenting biology/health care activities they already participate in, or even by designing a project of their own that gets approved by Prof. S.

## **Important Dates**

- Monday, January 16 (Dr. Martin Luther King, Jr. Holiday) – No Classes/College Closed
- Tuesday, February 14 (Faculty Development Day) – No Classes
- Monday, March 13 – Friday, March 17 (Spring Break) – No Classes/College Closed
- Friday, March 31 – Last day to withdraw with a grade of W. I cannot assign a student a grade of W and ceasing to attend class does not constitute student withdrawal. If you wish to withdraw from this or any C-term class with a grade of W, you must initiate that process by March 31.

## **Course and Institutional Policies**

### **Extra Credit and Dropped-Grades**

Aside from bonus points for good attendance and occasional bonus exam questions, I do not allow extra credit in any of my classes. There are no exceptions. If you want a good grade in my class, keep up with the course work, ask for help as needed, and do well on the exams.

I do not drop lowest assignments. There is no topic I cover in any of my classes where it is okay if a student does poorly. Do not request lowest assignment drops; I don't do that.

### **Student Services**

The College of Central Florida is committed to helping you succeed and achieve your academic, personal and career goals. There are a wide range of resources and support services available to you. When students are connected early to resources and support systems on campus, they are more likely to stay in classes, perform better in those classes, and complete their path more quickly. One example is through an Early Support Program, where you may receive an email indicating your professor or advisor is reaching out directly to help connect you to support services. This may include connecting you to tutoring, financial support, psychological support services, and disability services just to name a few. Be aware, you can also reach out to these services on your own as well. Additionally, we offer disability services, a testing center, and many other resources which are all available to you. [Please refer to the College Resources, Dates, and Policies document in your Canvas course to learn more about these supports.](#)

### **Testing and Academic Integrity**

During exams, the following rules will be in effect for all students.

- Hats and bulky coats or sweatshirts cannot be worn during the exam.
- No personal items will be permitted at your desk except for writing implements and a snack.
- If you leave the room during the exam – even to use the restroom – your exam will be considered finished and you will not be permitted to continue upon returning to the classroom.

Violation of these rules will lead to a score of 0 on your exam.

Any student determined to be cheating, engaged in plagiarism, or assisting another student in dishonest behavior as set forth in the CF Catalogue will be reported to the Chief Student Affairs Officer in accordance with institutional policy (see Academic Integrity in Section 7 of the Student Handbook). Cheating and/or plagiarism will not be tolerated and students that I determine to have engaged in academically dishonest behavior will receive a zero for the assignment in question (first offense) or an “FF” grade for the course (second offense or egregious first offense) as well as related disciplinary action under the Code of Student Conduct.

## Testing and Written Language

Precision in both written and spoken language is critical in science and health care. As such, grammar and spelling will count on examinations. I typically give a small amount of leeway for spelling of “challenging words,” but close may not be close enough for some words. Credit or lack of credit for spelling, grammatical, and word choice errors is at my discretion. Students are expected to learn and use proper abbreviations and shorthand, especially in chemistry, and there will be deductions on exams for failure to do this.

## Electronic Devices

Personal electronic devices such as smart phones are permitted at your desk during class only if they are kept turned off and screen-down, in plain sight on your desk. There will be occasions when we use your phones in class, at which time you will be allowed to use them but only for class-related activities. If you prefer not to tempt yourself, I will provide boxes for safe storage of phones during class. Students who violate these rules will be required to keep their phones in the storage boxes. Exceptions to keeping the phone on will be made only for students anticipating phone calls for emergencies and only if they have talked to me before class.

Per the recently passed HB 233, you are permitted under law to make audio or video recordings of classes without the instructor’s explicit permission. However...

- Per HB 233, this permission does not extend to laboratory environments.
- Per HB 233, these recordings must be for personal use only and cannot be published or otherwise shared without the instructor’s consent. I explicitly do not give consent for any student to do this.

While I cannot legally prohibit you from taking photographs of notes that I put on the board, I am **strongly discouraging you from doing this**. Taking photos seems like a fast and easy way to get accurate notes. **But you do not learn when you do this!** Writing down notes is the most effective way for getting that information into your memory, and using photography or video as a replacement will hurt, not help, your performance in any class.

## Absences and Course Make-Up Policy

- Worksheets and Quizzes cannot be made-up. In the case of Worksheets, students have a minimum of 7-days in which to complete each assignment and grading is based on when the assignment is turned in. Late submissions will be marked down, regardless of the reason it is late. In the case of the Syllabus Quiz, students have a full week to complete this quiz on-line and there are unlimited submission attempts. Late submissions will not be accepted.
- Attendance – As noted in the Attendance section, students can miss up to four full class periods without grade penalty.
- Examinations – If you miss an exam with a documented medical, legal, or similar excuse, you will be permitted to take a make-up exam. You must provide documentation and then make the exam up within 7 calendar days of the scheduled exam. Note: A parent’s note does not count as medical documentation...medical excuses require a note from a doctor’s office, hospital, or similar facility. Students who miss exams without an excuse may be permitted to take a make-up exam at the instructor’s discretion, but will do so with a 20% penalty to their exam grade.

## **Laboratory Disclaimer**

I teach this lecture in conjunction with a laboratory section 40 of BSC 2011L and the two courses are somewhat synchronized based on the order in which I cover content. If you are not enrolled in my laboratory section it is your responsibility to compensate for any laboratory material that you have not yet covered but that I expect has already been covered. I will do what I can to assist you – including making my lab manual available to you – but it is your responsibility to identify any gaps in your knowledge and address them.



## Course Calendar

This is a tentative schedule, subject to adjustment by the instructor as need arises. As much advance notice as possible will be given prior to changes in examination dates or worksheet due dates, particularly where tropical weather or pandemic conditions are concerned.

Day	Month	Date	Assignment Due/Class Topic
Tue	Jan	10	Course Orientation
Thu	Jan	12	WS #1 due by 7:00am / SQS available Classroom Topic: Scientific Reasoning & Review of Heredity IC #1 available at 12:15pm
Sun	Jan	15	WS #2 due by 12:00pm / SQS available
Mon	Jan	16	<b>Martin Luther King, Jr. Holiday - No Classes</b>
Tue	Jan	17	Classroom Topic: Darwin, Wallace & Natural Selection
Wed	Jan	18	<b>On-Line Syllabus Quiz (15-pts) due by 11:59pm with a *perfect score*</b>
Thu	Jan	19	Classroom Topic: Hardy-Weinberg Equilibrium IC #2 available at 12:15pm
Sun	Jan	22	WS #3 due by 12:00pm / SQS available
Tue	Jan	24	Classroom Topic: Solving Hardy-Weinberg Problems
Thu	Jan	26	Classroom Topic: Agents of Evolutionary Change IC #3 available at 12:15pm
Sun	Jan	29	WS #4 due by 12:00pm / SQS available
Tue	Jan	31	Classroom Topic: Speciation & Species Concepts
Thu	Feb	2	Classroom Topic: Macroevolution & Origins of Life IC #4 available at 12:15pm
Sun	Feb	5	WS #5 due by 12:00pm / SQS available
Tue	Feb	7	Classroom Topic: Phylogenetics
Thu	Feb	9	Classroom Topic: Ecology - Climates, Biomes & Biodiversity IC #5 available at 12:15pm
Tue	Feb	14	<b>Faculty Development Day - No Classes</b>
Wed	Feb	15	<b>Examination #1 (200-pts on WS 1 - 5)</b>
Sun	Feb	19	WS #6 due by 12:00pm / SQS available
Tue	Feb	21	Classroom Topic: Interspecific Interactions in Communities
Thu	Feb	23	Classroom Topic: Describing Biological Populations IC #6 available at 12:15pm
Sun	Feb	26	WS #7 due by 12:00pm / SQS available
Tue	Feb	28	Classroom Topic: Biological Communities & Biogeography
Thu	Mar	2	Classroom Topic: Trophic Systems & Nutrient Cycling IC #7 available at 12:15pm
Sun	Mar	5	WS #8 due by 12:00pm / SQS available
Tue	Mar	7	Classroom Topic: Review of Photosynthesis & The Plant Body 1
Thu	Mar	9	Classroom Topic: The Plant Body 2 & Plant Nutrition IC #8 available at 12:15pm

**Day Month Date Assignment Due/Class Topic**

March 13-17			Spring Break – No Classes
Sun	Mar	19	WS #9 due by 12:00pm / SQS available
Tue	Mar	21	Classroom Topic: Transport Processes in Plants
Thu	Mar	23	Classroom Topic: Reproduction in Flowering Plants IC #9 available at 12:15pm
Tue	Mar	28	<b>Examination #2 (200-pts on WS 6-9 / 60-pts on WS 1-5)</b>
Thu	Mar	30	WS #10 due by 7:00am / SQS available Classroom Topic: Animal Bodies & Homeostasis IC #10 available at 12:15pm
Fri	Mar	31	<b>Last Day to Withdraw from Classes with a Grade of “W”</b>
Sun	Apr	2	WS #11 due by 12:00pm / SQS available
Tue	Apr	4	Classroom Topic: Thermoregulation & Nutrition in Animals
Thu	Apr	6	Classroom Topic: Circulation & Transport in Animals IC #11 available at 12:15pm
Sun	Apr	9	WS #12 due by 12:00pm / SQS available
Tue	Apr	11	Classroom Topic: Gas Exchange & Transport in Animals
Thu	Apr	13	Classroom Topic: Osmoregulation in Animals IC #12 available at 12:15pm
Sun	Apr	16	WS #13 due by 12:00pm / SQS available
Tue	Apr	18	Classroom Topic: Nervous Systems in Animals
Thu	Apr	20	Classroom Topic: Endocrine Systems & Senses in Animals IC #13 available at 12:15pm
Sun	Apr	23	WS #14 due by 12:00pm / SQS available
Tue	Apr	25	Classroom Topic: Musculoskeletal Systems in Animals
Thu	Apr	27	Classroom Topic: Animal Behavior IC #14 available at 12:15pm
Fri	Apr	28	<b>Final day to submit worksheets or OAP assignments (by 11:59pm)</b>
Tue	May	2	<b>Examination #3 (200-pts on WS 10-14 / 120-pts on WS 1-9)</b>