

# COURSE SYLLABUS

BSC 1005C-Biological Sciences with Lab # 1022 Online

Fall 2023



**INSTRUCTOR INFORMATION**

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**ACADEMIC DEPARTMENT:**

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**Syllabus Addendum:** [www.spcollege.edu/addendum](http://www.spcollege.edu/addendum)

Prerequisite ENC 1101 or equivalent

Course Description

This course introduces the essential principles relevant to the biological sciences through combined lecture and laboratory activities. Contemporary issues are applied to topics in biology and include the process of science, evolutionary theory, organisms and ecology, cell structure and function, basic biological chemistry, diversity of life, and genetic mechanisms. (Note: Credit is only given for (BSC 1005 and BSC 1005L) or BSC 1005C or BSC 2010 or BSC 2011.)

Learning Outcomes and Objectives

1. The student will demonstrate the process of science by:
   1. summarizing scientific contemporary issues using essential science skills including, but not limited to, critical thinking, efficient written and/or oral communication, and the ability to identify reliable scientific information.
   2. applying the scientific method by collecting biological data in hands-on or simulated lab environments.
   3. explaining the terms and premises involved in solving problems scientifically, scientific research, and peer review.
2. The student will explain the diversity of life and identify the general characteristics of each of the major life groups by:
   1. recognizing characteristics of major biological taxonomic categories.
   2. comparing major taxonomic categories, distinguishing similarities and differences among them.
   3. listing specimens belonging to each of the major taxonomic groups.
3. The student will describe the underlying organization of nature, including the basic structure, function and homeostatic integration in select biological organisms by:
   1. recognizing levels of complexity in nature.
   2. identifying major cellular structures and their functions.
   3. defining the processes of cell division and its role in the life cycle of organisms.
   4. listing how organisms obtain and process energy, with special emphasis on photosynthesis and aerobic cellular respiration.
   5. explaining how organ systems function in order to provide homeostasis.
4. The student will explain the conceptual basis of evolutionary theory by:
   1. discussing the principles of evolutionary theory to the understanding of changes in abundance and kinds of life with time.
   2. describing different mechanisms of evolution such as natural selection, genetic drift, and gene flow.
   3. translating the importance of mutation in producing variation.
   4. listing the evidence of evolutionary change.
5. The student will describe the basic concepts and application of genetics by:
   1. defining genetic terms, such as chromosomes, genes, alleles, genotype and phenotype.
   2. solving genetics problems involving complete dominance, incomplete dominance, sex-linked traits, multiple alleles, multiple genes and simple pedigrees.
   3. summarizing the role of meiosis in heredity.
   4. naming technology that arises from our understanding of genetics and explaining its uses and implications.
6. The student will identify basic ecological principles by:
   1. explaining the flow of energy through ecosystems with respect to the laws of thermodynamics governing flow through successive trophic levels.
   2. distinguishing between biotic and abiotic factors in ecosystems.
   3. listing community ecology and interactions among populations.
   4. describing population dynamics, human population growth and topics in sustainability.
7. The student will demonstrate basic scientific equipment and techniques by:
   1. using various types of scientific equipment in hands-on or simulated lab environments.
   2. applying the knowledge of the equipment to other lab experiments.

**Availability of Course Content**

All assignments have posted due dates and students may not make up past due assignments unless a valid reason for missing the class work has been submitted to the instructor. The course will open on the first day of class, and close on the completion of the final exam, when grades will then be posted to MySPC.

## REQUIRED TEXTBOOK & OTHER RESOURCE INFORMATION

Essentials of Biology with Physiology. Simon. Pearson. Code for Modified Mastering with ebook. 9780135892602  **Pearson is used in the course for graded assignments. The Modified Mastering code is needed. The Pearson assignments are always accessed through the myCourses course home page.**

**Bookstore:** [www.spcollege.edu/textbooks](http://www.spcollege.edu/textbooks)

**Library:** [www.spcollege.edu/libraries](http://www.spcollege.edu/libraries)

**Accessibility:** <https://www.spcollege.edu/current-students/student-affairs/student-support-resources/accessibility-services>

## IMPORTANT DATES

August 14 First Day of Classes

August 16 Last Day to Add a Class

August 18 Last Day to Drop and Receive Refund

September 4 Labor Day

October 6-8 Proctored Midterm Exam

October 28 Withdrawal Date

October 31 Discovery Day

November 10 Veterans Day

November 19-25 Thanksgiving Holiday

December 1-3 Proctored Final Exam

## DISCIPLINE SPECIFIC INFORMATION

**Student Responsibilities:** <https://www.spcollege.edu/current-students/student-affairs/student-right-to-know/student-responsibilities>

**ONLINE STUDENT PARTICIPATION AND CONDUCT GUIDELINES:**

The practices of courtesy and respect that apply in the on-campus classroom also apply online. Any discriminatory, derogatory, or inappropriate comments are unacceptable and subject to the same disciplinary action applied in courses offered on campus.

When you send an email to your instructor, department chair, dean, or classmates, you should:

* Use a subject line that describes what you are writing about
* Avoid attachments unless you are sure your recipients can open them
* Be clear, concise, and courteous
* Sign your message with your name
* Use your SPC email account to ensure delivery. Sometime emails from non-SPC accounts are stopped by the spam filter and the recipient may not receive it.

**Netiquette:** We will be using zoom. Students are expected to be participating in the call, seen and pay attention. No costumes, outbursts, disrespectful, lewd or other distracting behaviors. Please be in a quite environment or muted. SPC has outlined expectations for student behavior and interaction for online discussions, email, and other forms of communication: [www.spcollege.edu/addendum/#expectations](http://www.spcollege.edu/addendum/#expectations)

**ATTENDANCE:**

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The college-wide attendance policy is included in the Syllabus Addendum (The policy notes that each instructor is to exercise professional judgment and define “active participation” in class (and therefore “attendance”) and publish that definition in each syllabus. **For this class, attendance is defined as completing and turning in assignments on time.** Students can miss **three assignments** before being withdrawn.

Students will be automatically withdrawn at the beginning of the term for non-payment of course fees. Faculty verifies that students are in attendance at least once each week during the first two weeks of class. Students classified as “No Show” for both of the first two weeks will be administratively withdrawn. Immediately following the 60% point of the term each instructor will verify which students are actively participating in class as defined above. Students classified as not meeting the criteria for active class participation will be administratively withdrawn with a “WF.” Nonparticipation after the 60% deadline will result in a “F” grade regardless of current average.

Note: the student has until the 70% mark to withdraw themselves with a grade of "W" . This would not lower their GPA. Students and instructors will automatically receive an email notification to their SPC email whenever a withdrawal occurs.

An absence is considered excused when written documentation is provided and verified by the instructor. If there is an extenuating circumstance that made it impossible for you to complete assignments on time, you must contact the instructor within 48 hours of the due date of the assignment.

Since this course is available online, you can participate from any location with Internet access. In addition, please have a backup plan - a place to go that has access to a computer with Internet access in case your computer fails to function. Not having a computer or having a broken computer, or no Internet access is no excuse for missing assignments.

## GRADING

This class uses a **weighted percentage system**, which means all assignments for a certain category make up a percentage of your grade regardless of the number of points for each assignment. Each category holds a certain value towards your overall grade. Here is the breakdown of all grade categories:

|  |  |
| --- | --- |
| Exams- #1-4 each 10% total grade | 40%-of the overall course grade |
| Quizzes-(lowest dropped) | 30% of the overall course grade |
| Graded Online Activities | 30% of the overall course grade |

\*\*please note that some activities are called quizzes in mycourses but they are still activities. when in doubt, please review the course schedule.

Grading Scale:

|  |  |
| --- | --- |
| Letter Grade | Percentage |
| A | 90-100 |
| B | 80-89 |
| C | 70-79 |
| D | 60-69 |
| F | >60 |

Quizzes – All assessments, except the proctored exams, in the course may be taken **twice**. The higher grade of your two attempts will count toward your quiz grade. There is a time limit of 20 minutes for each attempt of a 10 question quiz.

All work is due by the assigned due date. **Make-ups for exams are not permitted unless there is verifiable documentation, so be sure to take exams on the dates scheduled.** You will receive a grade of zero for any quiz not taken, discussion forum not posted, online graded activity not completed, or exam not completed.

**PROCTORED EXAM INFORMATION:** *All exams are proctored and students will be required to buy an Honorlock pass for $10 for the term.* These will cover all exams.  A proctored exam is an exam that is administered by an authorized individual who supervises the student while they are taking the exam. The proctor's function is to ensure the integrity and security of the exam in a secure testing environment.

Students will **not** be allowed to use notes, texts or online resources during proctored exams.

Proctored exams will be at home via the Honorlock program tied to your exams in myCourses. Students will need to make sure they have a webcam. Honorlock is an online proctoring service that allows you to take your exam from the comfort of your home. **Honorlock is available 24/7 and all that is needed is a computer, a working webcam, and a stable Internet connection. To get started, you will need Google Chrome and the Honorlock Chrome Extension.** You can download the extension at [www.honorlock.com/extension/install](https://nam02.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.honorlock.com%2Fextension%2Finstall&data=02%7C01%7Cstickrath.kelli%40spcollege.edu%7C4c9c5db8fb0a4a14595c08d7d4cbd05f%7C575038c8ac704295810e0df79c005f41%7C0%7C1%7C637211844151126064&sdata=P01V8HE2Hl54yKa5hYmVWy56BrvaB6SxEeQy6%2BO1qyY%3D&reserved=0).

When you are ready to test, log into myCourses, go to your course, and click on your exam. Clicking *"Launch Proctoring" at the bottom of the screen* will begin the Honorlock authentication process, where you will take a picture of yourself, show your ID, and complete a scan of your room. Honorlock will be recording your exam session by webcam, as well as recording your screen. Honorlock also has an integrity algorithm that can detect search-engine use, so please do not attempt to search for answers, even if it's on a secondary device. All videos are sent to me for review and flagged green (good), yellow (possible violation), red (probable violation recorded).

**Student Rights:** <https://www.spcollege.edu/current-students/student-affairs/student-right-to-know>

## STUDENT SURVEY OF INSTRUCTION

The Student Survey of Instruction is administered in courses each semester. It is designed to improve the quality of instruction at St. Petersburg College. All student responses are confidential and anonymous and will be used solely for the purpose of performance improvement.

**Technical Support:** [www.spcollege.edu/helpdesk](http://www.spcollege.edu/helpdesk)

## ASSIGNMENTS Tentative Class Schedule

**Readings are in bold face.**

Q*uiz Assessments are in italics*, and Graded Online Activities are underlined.

Both Quizzes and Graded Online Activities are worth a grade.

Activities in yellow are found in the Mastering Biology website.

Review sheets for the exams will be provided in MyCourses.

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| --- | --- | --- | --- |
| Week/Date | Module | Activity | Du/e Date |
| 1-August 14 | 1 | *Assessment – Course Syllabus Quiz (BEGIN here module)*  **Reading – Chapter 1**  Video #1- Hierarchy of Life  *Assessment- Learning about Life Quiz* | 8/20 |
| 2- 8/21 | 1 | **Reading- Scientific Observation**  Video #1- The Process of Science  Video #2- The Scientific Method: Steps, Terms and Examples  Activity- Scientific Method Virtual Lab | 8/27 |
| 3- 8/28 | 2 | Video #1- Evolution supporters and critics  **Reading – Chapter 13**  Video #2 – Evolution, It’s a Thing  Video #3 – Natural Selection  Activity #1- Discussion: Mutations/ Recent Evolution  Activity #2- Natural Selection Virtual Lab | 9/3 |
| 4-9/4  **Sept 8-10** | 2 | **Reading – Chapter 14**  Video #1- Speciation: Of Ligers & Men  Video #2 – Population Genetics: When Darwin Met Mendel  Video #3 – Mutations  *Assessment- Evolution Quiz*  ***Proctored Exam #1 on Chapters 1, 13, & 14***  ***Dynamic Study Modules for extra credit are due*** | 9/10 |
| 5- 9/11 |  | Video #1 - Parts of a Compound Light Microscope  Activity*–* Microscope Virtual Lab | 9/17 |
| 6- 9/18 | 3 | **Reading – Chapter 8**  Video #2 – Mitosis  Video #3 – Mitosis: Splitting Up is Complicated  Video #4 – Meiosis  Video #5 – Meiosis: Where Sex Starts  *Assessment- Cell Division Quiz*  Activity- Cell Division Mitosis Virtual Lab | 9/24 |
| 7-9/25 | 4 | **Reading – Chapter 9 & 10**  Video #1– Genotypes and Phenotypes  Video #2 – Heredity  Activity #1 –Genetics Virtual Lab  Activity #2-Current events in Genetics | 10/1 |
| 8- Oct 2  **Oct 6-8** | 4 | **Reading– Chapter 12 (On midterm) & 15 (Not on midterm)**  Video # 1– DNA Fingerprinting  Video #2- How to Sequence the Human Genome  Activity #1- Discussion: DNA Technology and Society  *Assessment: Genetics, DNA, and Genes quiz*  ***Exam #2 Proctored Midterm on Chapters 8-12***  ***Dynamic Study Modules for extra credit are due*** | 10/8 |
| 9- 10/9 | 5 | **Reading – Chapter 16**  Video #1 – Taxonomy: Life’s Filing System  Video #2 – Comparative Anatomy: What Makes Us Animals  Video #3 – Simple Animals: Sponges, Jellies, & Octopuses  *Assessment – Bacteria, Protists, Plants and Fungi Quiz* | 10/15 |
| 10- 10/16 | 5 | **Reading- Chapter 17**  Video #1 –Complex Animals: Annelids & Arthropods  Video #2 – Chordates  *Assessment- Animals Quiz*  Activity #1– Current Events on Animals | 10/22 |
| 11- 10/23 | 6 | **Reading - Chapter 18**  Video #1 – Ecology – Rules for Living on Earth  Video #2 – Ecosystem Ecology: Links in the Chain  Activity #1 – Current Events on Climate Change  *Assessment-Ecology Quiz* | 10/29 |
| 12- 10/30  **Nov 3-5** | 6 | **Reading - Chapters 19 & 20**  Video #1 – The Hydrologic and Carbon Cycles: Always Recycle  Video #2 – Nitrogen & Phosphorus Cycles: Always Recycle! Part 2  Video #3- 5 Human Impacts on the Environment  Activity #1- What is my Impact? Discussion  Activity #2- Population Growth  *Assessment- Populations, Communities and Ecosystems Quiz*  ***Proctored Exam #3 on chapters 15-20***  ***Dynamic Study Modules for extra credit are due*** | 11/5 |
| 13- Nov 6 | 7 | **Reading – Chapter 4 & 5**  Video #1 – A Tour of the Cell  Video #2 – Eukaryopolis – The City of Animal Cells  Video #3 – Plant Cells  *Assessment – Cell Quiz*  Activity- Cells Virtual Lab  Activity- Enzymes Virtual Lab | 11/12 |
| 14- 11/13 | 8 | **Reading #1 – Chapters 6 & 7**  Video #1 – ATP & Respiration  Video #2 – Photosynthesis  *Assessment- Cellular Respiration and Photosynthesis Quiz*  Activity- Photosynthesis Virtual Lab | 11/19 |
| 15- 11/20 |  | **Happy Thanksgiving week!** |  |
| 16- 11/27  **Final Dec 1-3** | 8 | **Reading – Chapter 21**  Video – Homeostasis  Activity- Current Events on Animal Structure and Function  *Assessment– Animal Structure and Function Quiz*  ***Exam #4– Final Unit Exam – PROCTORED on Chapters 4-7 and 21***  ***Dynamic Study Modules for extra credit are due*** | 12/3 |