

Biology for Science Majors I

BIOL-1406

Summer II 2021 Section N01 CRN-40726 4 Credits 07/12/2021 to 08/09/2021 Modified 07/07/2021

Meeting Times

This is an online course. All content for this course is accessible through eCampus.

Contact Information

Instructor: Arlene Pacheco

Email: arlene.pacheco@blinn.edu

Office: Zoom

Office Hours

Tuesday, Wednesday, Thursday, 12:00 PM to 1:30 PM, Zoom

Other times available by appointment

Description

3 lecture hours and 3 lab hours per week; 96 total contact hours. Credit: 4 semester hours

Fundamental principles of living organisms will be studied, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of cytology, reproduction, genetics, and scientific reasoning are included. Lab activities reinforce lecture topics.

Requisites

Prerequisite: A student must be college ready in reading according to TSI college-ready standards.

Recommended: Successful completion of MATH 1314 - College Algebra or concurrent enrollment in higher-level mathematics.

Core Curriculum Statement

Through the Texas Core Curriculum, students will gain a foundation of knowledge in human cultures and the physical and natural world, develop principles of personal and social responsibility for living in a diverse world, and advance intellectual and practical skills that are essential for all learning. For details relating to this core course, please see:

<http://www.blinn.edu/academics/core-curriculum.html> (<http://www.blinn.edu/academics/core-curriculum.html>)

Outcomes

1. Describe the characteristics of life.
2. Explain the methods of inquiry used by scientists.
3. Identify the basic requirements of life and the properties of the major molecules needed for life.

4. Compare and contrast the structures, reproduction, and characteristics of viruses, prokaryotic cells, and eukaryotic cells.
5. Describe the structure of cell membranes and the movement of molecules across a membrane.
6. Identify the substrates, products, and important chemical pathways in metabolism.
7. Identify the principles of inheritance and solve classical genetic problems.
8. Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.
9. Describe the unity and diversity of life and the evidence for evolution through natural selection.
10. Apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
11. Use critical thinking and scientific problem-solving to make informed decisions in the laboratory.
12. Communicate effectively the results of scientific investigations.

Materials

Textbook: *Life: The Science of Biology* (BIOL 1406 PKG bundled with LaunchPad access and REEF coupon), 12th Edition, 2020. Sadava, Hillis, Heller, and Hacker. Sinauer Associates. [ISBN 9781319384784].

Laboratory Manual: *BIOL 1406 Lab Manual*, 1st Edition, 2019. Hayden-McNeil/Macmillan Learning, Plymouth, MI [ISBN 9781533919212]

eCampus access

Achieve access code

Desktop computer or Laptop with broadband capabilities

Webcam for exam proctoring

Software: Word, Excell, Powerpoint and Yuja (all free to download in your Buc email account)

High speed Internet access

Course Requirements

Lecture Exams

There will be four major lecture exams during the semester. These will cover material from the lecture videos, readings from your text, online eCampus assignments and assignments from Achieve online learning platform. The exam questions may consist of multiple choice, true/false, fill-in-the-blank, drawings/diagrams, matching, and short answer. All exams will be taken online through Honorlock and will have a two hour time limit. You will have a 24 hour window to take the exam. All questions must be answered in order of appearance as you may not go back to questions during the exam. Questions that are not answered will obtain zero points. There will be no Make-up exams. Rescheduling an exam is not permitted. Failure to take an exam will result in a zero grade.

Lab Practicals

There will be three departmental lab practicals. They will consist of short answer, problem solving, or fill-in-the-blank. You will use your lab manual, worksheets, and skills you learn during lab to prepare for the practicals. All exams will be taken online through Honorlock and will have a two hour time limit. You will have a 24 hour window to take the exam. All questions must be answered in order of appearance as you may not go back to questions during the exam. Questions that are not answered will obtain zero points. There will be no Make-up exams. Rescheduling an exam is not permitted. Failure to take an exam will result in a zero grade.

Final Exam

The final exam is comprehensive and required for all students. The exam is departmental (all 1406 students take the same exam) and will consist of 100 questions. It will be taken online through Honorlock and will have a time limit. You will have a 24 hour window to take the exam. All questions must be answered in order of appearance as you may not go back to questions during the exam. Questions that are not answered will obtain zero points. There will be no Make-up exam. Rescheduling the exam is not permitted. Failure to take the exam will result in a zero grade.

Participation

Your participation score will come from grades received on eCampus lecture and lab assignments.

Quizzes

Your quiz score will come from grades received on eCampus lecture quizzes at the end of every chapter module.

Achieve

assignments completed through achieve online learning platform will cumulatively contribute to up to 5% possible bonus points to your final grade.

✓ Evaluation

How to Succeed in this Course

Science courses may be challenging and difficult. Most successful students spend two to four hours studying per week for each credit hour of the course.

Key Points

- Have access to all the materials and technology required for this course (webcam, microphone, computer, reliable internet, etc).
- Attend all classes. Each lecture builds on the previous lecture. Stay ahead of the material.
- Come to class prepared by reading the textbook and/or lab manual beforehand and taking notes before class to improve success.
- If you have a question during lecture, go ahead and ask it. Chances are that at least three other students have this same question.
- Know your deadlines and course policies by looking at the syllabus, instructor announcements, and eCampus dates, schedules, and news items.
- Work through lots of practice problems in addition to your homework.
- Form study groups with your peers.
- Ask your professors for help, visit office hours, and, if needed, request an appointment to see your instructor one-on-one.
 - Be prepared when you visit with your instructor and have questions related to content ready.
- Seek help from Blinn College's tutoring services, if needed.
- Be responsible for your own learning by actively engaging in the course.

Point Distribution

Type of Assignments	Total Possible
Lecture Exams	40%
Quizzes	10%
Participation	10%
Lab Practicals	20%
Final Exam (1)	20%
Total Point Scale	100%

Grading Scale

Points	Letter Grade
90.0 - 100%	A
80.0 – 89.99%	B
70.0 – 79.99%	C
60.0 – 69.99%	D
Less than 60%	F

Blinn College Policies

All policies, guidelines, and procedures in the [Blinn College Catalog \(http://catalog.blinn.edu/\)](http://catalog.blinn.edu/), [Blinn College Board Policies \(http://pol.tasb.org/Home/Index/1204\)](http://pol.tasb.org/Home/Index/1204), and the [Blinn College Administrative Regulations \(https://www.blinn.edu/administrative-regulations/\)](https://www.blinn.edu/administrative-regulations/) are applicable to this course.

[Specific information on civility, attendance, add/drop, scholastic integrity, students with disabilities, final grade appeal, alternative retailers, campus carry and proctoring arrangements and cost. \(http://www.blinn.edu/syllabus-policies/\)](http://www.blinn.edu/syllabus-policies/)

Notice of any action taken under these protocol and procedures, by Blinn College or its employees, may be delivered by hand, through the U.S. Postal Service, or electronically to the student's Blinn Buc e-mail account. Notice shall be deemed received upon actual receipt, on deposit in the U.S. Mail, or upon entering the information processing system used by Blinn College for Blinn Buc e-mail accounts, whichever first occurs.

Information about the changes Blinn has made to the May Minimester, Summer I, and Summer II semesters: [Back with Blinn \(https://www.blinn.edu/back-with-blinn/index.html\)](https://www.blinn.edu/back-with-blinn/index.html).

* Course Policies

[Please read: May Minimester, Summer I, and Summer II 2021 General Classroom Procedures. \(http://www.blinn.edu/back-with-blinn/course-policies.html\)](http://www.blinn.edu/back-with-blinn/course-policies.html)

Problem Resolution

If you have a complaint about your class, you should first request a conference with your instructor to try and resolve the problems or issues. If the problems or issues cannot be resolved at the instructor level, you should request a conference with the Biology Department Head.

Dr. Steve R. Simcik
Office: D-211
Phone: 979-209-7515
Email: steve.simcik@blinn.edu

Laboratory Safety

Students will be provided with laboratory safety training during the first week of class. Students are expected to follow all safety rules including rules related to proper lab attire. **Closed toe shoes are required in the laboratory.** Students that fail to follow this rule, will be required to leave the lab and will be assigned an unexcused absence for the class day.

Honorlock Protocol

- **Be aware of the times for the test.**
You will be given at least a 24 hour window to access the exam. If you are still working on the exam after that window is closed, the exam will end for you. Plan your start time accordingly.
- **You cannot go back to previous questions on exam.**
Once you answer a question, you cannot return to a previous question. Be aware of which answer you are submitting.
- **No scratch paper.**
There will be places for you to take notes in the exam.

Honorlock pass does not mean it is a pass for me.

Honorlock has built in protections to prevent cheating, that does not mean an all clear from Honorlock means that there is an all clear from me. Cheating on exams will result in a grade of zero and a report on the student's record.

Zoom Etiquette

- **Camera is on when you start meeting.**
This is for attendance purposes. You can also download the Zoom app to use via your smart device such as your phone.
- **Clothing is NOT optional.**
Remember that, even though you may be alone at home, your professor and classmates can SEE you!
- **Be aware of your surroundings.**
Your professor and classmates can also see BEHIND you. Make sure that there is nothing in the background that may be offensive or a distraction.
- **Mute is your friend.**
Once you log in to the virtual classroom, be sure to mute your microphone (lower left-hand corner). This will help to eliminate background noise that could distract others.
- **Raise your hand and wait to be called upon.**
If you wish to speak, either physically raise your hand or use the "Raise Hand" button in the participants tab. Once the teacher calls on you, unmute yourself and begin speaking. When you have finished speaking, indicate you are done by saying something like "That's all" or "Thank you" or "Over" and then mute your microphone again.
- **Everything is being recorded.**
The Zoom chat feature is a tool to make comments and ask questions without interrupting the speaker but be aware that your comments are public and are recorded in the minutes of the session.
- **Be aware of your screen when sharing.**
Make sure your tabs and programs are school appropriate.
- **Please respect computer privacy when sharing screen.**
If you have control of someone else's screen, please stay on agreed upon windows.

Schedule

Week 1	Lecture Topics	Lab Material	Minutes Δ	Contact Hours
M 07/12	Orientation/syllabus/first assignments Ch 01 Studying Life	Lab 1: Safety Lab 2 Scientific Method	Online Lecture -120 Online Lab -115	4.7
T 07/13	Ch 02 Chemistry of Life	Lab 3 Experimental Design Lab 4 Metric Measurement	Online Lecture -120 Online Lab -115	4.7

W 07/14	Ch 03 Proteins, Carbohydrates, & Lipids	Lab 5 Properties of Water	Online Lecture -120 Online Lab -115	4.7
R 07/15	Ch 04 Nucleic Acids and the origin of life (4.1 only)	Lab 6 – Testing for Macromolecules and Macromolecule Activity. Lab Exam #1 Review	Online Lecture -120 Online Lab -115	4.7
F 07/16	EXAM 1 Chapters (1-4.1)	Lab Exam #1 (Labs 1-6)	Online Lecture -120 Online Lab -115	4.7
Week 2	Lecture Topics	Lab Material	Minutes Δ	Contact Hours
M 07/19	Ch 5 Cells: The working units of life.	Lab 7 Microscopy Lab 8 –Observing Cells in Action	Online Lecture -120 Online Lab -115	4.7
T 07/20	Ch 06 Cell Membranes	Lab 9 Membrane Transport Lab 10 Intro to spectrophotometer Lab	Online Lecture -120 Online Lab -115	4.7
W 07/21	Ch 07 Cell Communication □ (7.1 & 7.2 only)	Lab 11 Enzymes Pick ONE variable to prepare and submit a Yuja video presentation and written report.	Online Lecture -120 Online Lab -115	4.7
R 07/22	Ch 16.3 Viruses	Lab 11 submit your written report in dropbox.	Online Lecture -120 Online Lab -115	4.7
F 07/23	EXAM 2 (Chapters 5-7, 16.3)	Lab 11 submit your Yuja video presentation	Online Lecture -120 Online Lab -115	4.7
Week 3	Lecture Topics	Lab Material	Minutes Δ	Contact Hours
M 07/26	Ch 08 Energy, Enzymes, & Metabolism	Lab 12: Cellular Respiration Cell Metabolism Concept Maps	Online Lecture -120 Online Lab -115	4.7
T 07/27	Ch 09 Cellular Respiration	Lab 13 Photosynthesis	Online Lecture -120 Online Lab -115	4.7

W 07/28	Ch 10 Photosynthesis: Energy from Sunlight	Lab 14 Eukaryotic Cell Division Lab Exam #2 Review	Online Lecture -120 Online Lab -115	4.7
R 07/29	EXAM 3 (Chapters 8-10)	Lab Exam #2 (Labs 7-13)	Online Lecture -120 Online Lab -115	4.7
F 07/30 Q	Ch 11 The Cell Cycle & Cell Ch 12 Inheritance, Genes, & Chromosomes Q drop deadline: 07/30/2021	Lab 15 Genetics	Online Lecture -120 Online Lab -115	4.7
Week 4		Lab Material	Minutes Δ	Contact Hours
M 08/02	Ch 13 DNA & Its Role in heredity	Lab 16 DNA Isolation/ Restriction Enzyme Digestion	Online Lecture -120 Online Lab -115	4.7
T 08/03	Ch 14 From DNA to Protein	Lab 17 Gel Electrophoresis Gene Expression Concept Maps	Online Lecture -120 Online Lab -115	4.7
W 08/04	Ch. 15: Mutations (15.1 & 15.2)	Lab Exam #3 Review Activity	Online Lecture -120 Online Lab -115	4.7
R 08/05	EXAM 4 (Chapters 11-15.2)	Lab Exam #3 (Labs 14-17)	Online Lecture -120 Online Lab -115	4.7
F 08/06	Ch 16.1 & 16.2 Regulation of Gene expression [□]	Final Exam Review	Online Lecture -120 Online Lab -115	3.7
Week 5	Final Exam Week		Minutes Δ	Contact Hours
M 08/09 Final Exam	Final Exam		Online Exam -135	3
	Total Contact Hours: Δ In the Carnegie Hour System, 50 minutes = 1 Contact hour		96 Contact hours	96