UCONN
UNIVERSITY OF CONNECTICUT

BIOLOGY 1107: Principles of Biology I
Fall Semester, 2022
Section 001 (9:05-9:55AM, Mon-Wed-Fri)

Credits: 4
Format: Lectures M-W-F for 50 minutes, with one 3-hour laboratory session each week. Prerequisites: A course in high school level chemistry or concurrent enrollment in CHEM 1127 are recommended for students enrolling in BIOL 1107.
HuskyCT Course Site: https://lms.uconn.edu/

Professor: Dr. Thomas D. Abbott
Email: thomas.abbott@uconn.edu
Office Hours/Availability: By appointment
Office Location: Torrey Life Science, room 212

Required Materials: (Course materials should be obtained before the first day of class. They are available for purchase at the UConn Bookstore.)

- A Life Story: The Journey of Animal Biological Engineering, 1st Edition, Top Hat Publishing, Dr. Thomas D. Abbott
- Laboratory Manual: BIOL 1107 NextGen Biology Laboratory, Top Hat Publishing, Dr. Christopher Malinoski, Fall 2022/Spring 2023 ed.

Computer and Internet Access:
Access to the World Wide Web is required. Computers are available at the University Computer Center, Residential Life, University Library, and other locations on campus.

Course information will be posted on HuskyCT, which is accessible with your University Net ID and password. You will have TWO HuskyCT course sites: (1) lecture and (2) lab.

HuskyCT is accessed at: https://lms.uconn.edu/. If you have difficulty accessing HuskyCT, contact the ITS Help Center at https://helpcenter.uconn.edu/. You also have 24x7 Course Support including access to live chat, phone, and support documents.

Course Goals

By the end of the semester, students should be able to:

1. Explore an area of science and technology through reading and experimentation that introduces students to a broad coherent body of knowledge and contemporary scientific or technical methods.

2. Demonstrate an understanding of the nature of modern scientific inquiry, the process of investigation, and the interplay of data, hypotheses, and principles in the development and application of scientific knowledge.

3. Discuss unresolved questions in some area of science or technology and using current methods of investigation describe how progress might be made in answering these questions.

4. Promote interest, competence, and commitment to continued learning about contemporary science technology and its impact upon the world and human society.

5. (LAB) Use lab equipment, such as spectrophotometer, micro pipette, gel electrophoresis apparatus, probe ware

Course Description

Biology 1107 is an introductory course that is aligned with the University General Education Guidelines/Criteria for all CA3 (Group 3) Science and Technology courses and will acquaint students with scientific thought, observation, experimentation, and formal hypothesis testing, and enable students to consider the impact that developments in science and technology have on the nature and quality of life.

Course Learning Objectives

Upon completion of this course, the student should be able to:

1. Examine the underlying principle that structure leads to function in living systems and how our understanding of this physiology can enable human beings to more efficiently address modern societal issues.
2. Describe current methods used in biotechnology, such as Gel Electrophoresis, and how it would be used to gain scientific or technical knowledge.
3. Explain the conceptual basis of the Scientific Method, including its definition, motivation, steps of application, hypothesis testing, and misapplications.
4. Analyze published articles from scientific journals to discern integrity of scientific claims.

Assessments used for all learning objectives would constitute: Lecture Exams, Laboratory Exercises, which can be in the form of Quizzes, Reports, Pre and Post Laboratory Assignments, and Laboratory Practical's.

Date	Lecture Topics	Topic Readings
Mon. 08/29	Life in the Beginning	Topic 1: Part 1
Wed. 08/31	Life in the Beginning	Topic 1: Part 2
Fri. 09/02	Life's Chemistry	Topic 2
Mon. 09/05	**Labor Day, no class**	
Wed. 09/07	Macromolecules: Proteins	Topic 3: Part 4
Fri. 09/09	Macromolecules: Proteins completed	Topic 3: Part 4
Mon. 09/12	Macromolecules: Nucleic Acids	Topic 3: Part 1
Wed. 09/14	Macromolecules: Carbohydrates	Topic 3: Part 2
Fri. 09/16	Macromolecules: Lipids	Topic 3: Part 3
Mon. 09/19	Animal Nutrition	Topic 4: Part 1
Wed. 09/21	Animal Nutrition: completed	Topic 4: Part 2
Fri. 09/23	Cell Membranes and Transport	Topic 5

Mon. 09/26	**Exam I**	
Wed. 09/28	Gas Exchange: The Respiratory System	Topic 6
Fri. 09/30	Gas Exchange completed	Topic 6
Mon. 10/03	Energy: Enzymes and Biological Reactions	Topic 7: Part 1
Wed. 10/05	Energy: Cellular Respiration	Topic 7: Part 2
Fri. 10/07	Energy: Ectothermy, Endothermy and Bioenergetics	Topic 7: Part 3
Mon. 10/10	Osmoregulation: Regulating the Internal Environment	Topic 8: Part 1
Wed. 10/12	Osmoregulation: Kidney Structure and Function	Topic 8: Part 2
Fri. 10/14	Osmoregulation**:** Kidney Structure and function completed	Topic 8: Part 2
Mon. 10/17	**Exam II**	
Wed. 10/19	DNA Structure and Replication:	Topic 9
Fri. 10/21	DNA Structure and Replication completed	Topic 9
Mon. 10/24	Mendel, Genes and Inheritance	Topic 10
Wed. 10/26	Mendel, Genes and Inheritance, completed	Topic 10
Fri. 10/28	Biotechnology	Topic 11
Mon. 10/31	Biotechnology, completed	Topic 11
Wed. 11/02	Gene Regulation: Prokaryotes	Topic 12: Part 1
Fri. 11/04	Gene Regulation: Eukaryotes:	Topic 12: Part 2
Mon. 11/07	**Exam III**	
Wed. 11/09	Protein Synthesis	Topic 13: Part 1
Fri. 11/11	Protein Synthesis: completed	Topic 13: Part 2
Mon. 11/14	Circulatory System	Topic 14
Wed. 11/16	Circulatory System: Completed	Topic 14
Fri. 11/18	Endocrine System: Introduction	Topic 15: Part 1
Mon. 11/21	**Thanks Giving Break**	

Mon. 11/28	Endocrine System completed	Topic 15: Part 2
Wed. 11/30	Nervous System	Topic 16: Part 1
Fri. 12/02	Nervous System	Topic 16: Part 2
Mon. 12/05	Immune System	Topic 17: Part 1
Wed. 12/07	Immune System	Topic 17: Part 2
Fri. 12/09	**Exam IV**	

Course Requirements and Grading

Summary of Course Grading:

Course Components	Weight
4 Exams	50%
Laboratory	45%
Topic Multiple-Choice Questions	5%

Exams and Grades:

Exam dates: There will be four exams, each covering 1/4 of the course material. Exams will be held in our lecture classroom during scheduled class time using HuskyCT and personal computers/devices. Check the HuskyCT lecture site for announcements. Exam grades will be posted to your HuskyCT lecture section page.

Exam I: Monday, September 26, 2022
Exam II: Monday, October 17, 2022
Exam III: Monday, November 7, 2022
Exam IV: Friday, December 9, 2022

Exam format, content and point value: All four exams will consist of 50 questions in multiple-choice format. *Exams will be based on both lecture material and the readings. ***The average of the four exam scores will comprise 50% of your course grade.*** **Your performance in the lab will contribute 45% of your course grade and your participation and performance on the Topic multiple-choice questions will comprise 5%.**

Special Notes on Topic roll out and Questions: Reading Topics for Exam I will be made available by the first day of class. Subsequent Reading Topics for each of the next three exams will be made available on the scheduled exam day of the **previous exam**. Regarding the embedded multiple-choice questions per Reading Topic, you will have until 9:00AM the day of each exam to respond to all the Topic Questions found in each of the Topics covered in the syllabus for that particular exam. After 9:00AM on

able to respond to them.

Final Grades: Grades for each exam are not scaled. The only scaling, (if any) that counts towards your actual course grade depends on over-all class performance.

Exams for students with special needs: If you have a documented learning disability, the CSD Office using email will inform the instructor of your necessary accommodations. Additionally, CSD will encourage you to discuss these accommodations with your instructor.

Makeup Exams

Makeup Exam Policy: Makeup exams are available **only** to students who have a legitimate excuse for missing an exam, such as illness, scheduled job interview out of town athletic team events, etc. If you know in advance that you must miss an exam, contact the instructor.

Makeup Exam Dates: Makeup exams will be scheduled on a case-by-case basis. Makeup exams may include short- answer, short essay, and/or multiple-choice questions.

Laboratories:

(1) Laboratory start date: Lab begins the second week of classes, **Tuesday, September 6, 2022.** Location: Bronwell (Engineering III) rooms 118,119,120

(2) Information: Lab syllabus, lab schedules, TA and assignment information are posted on the **Lecture HuskyCT site**. Click on the "**Laboratory Information**" icon for these listings. Only lab grades are recorded in the Laboratory HuskyCT site.

(3) Please see the Laboratory Syllabus for the following: Attendance Policy, Laboratory Makeup Policy, Dissection Policy and Laboratory Grading Policy.

Academic Misconduct Policy:

UConn's Policy: A fundamental tenet of all educational institutions is academic honesty; academic work depends upon respect for and acknowledgement of the research and ideas of others. Misrepresenting someone else's work as one's own is a serious offense in any academic setting and it will not be condoned.

Academic misconduct includes, but is not limited to the following:

- Providing or receiving assistance in a manner not authorized by the instructor in the creation of work to be submitted for academic evaluation (e.g. papers, projects).
- Any attempt to influence improperly (e.g. bribery, threats) any member of the faculty, staff, or administration of the University in any matter pertaining to academics or research.
- Presenting as one's own work the ideas or words of another for academic evaluation.
- Doing unauthorized academic work for which another person will receive credit or be evaluated.
- Presenting the same or substantially the same papers or projects in two or more courses without the explicit permission of the instructors involved.

A student who knowingly assists another student in committing an act of academic misconduct shall be equally accountable for the violation, and shall be subject to the sanctions and other remedies described in The Student Code at http://www.dos.uconn.edu/.

Student Responsibilities and Resources

As a member of the University of Connecticut student community, you are held to certain standards and academic policies. In addition, there are numerous resources available to help you succeed in your academic work. Review these important standards, policies and resources, which include:

- **The Student Code**
- **Academic Integrity**
- **Resources on Avoiding Cheating and Plagiarism**
- **Copyrighted Materials**
- **Netiquette and Communication**
- **Adding or Dropping a Course**
- **Academic Calendar**
- **Policy Against Discrimination, Harassment and Inappropriate Romantic Relationships**
- **Sexual Assault Reporting Policy**
- **Students with Disabilities**

The University of Connecticut is committed to protecting the rights of individuals with disabilities and assuring that the learning environment is accessible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, please let me know immediately so that we can discuss options. Students who require accommodations should contact the Center for Students with Disabilities, Wilbur Cross Building Room 204, (860) 486-2020 or http://csd.uconn.edu/.

Blackboard measures and evaluates accessibility using two sets of standards: the WCAG 2.0 standards issued by the World Wide Web Consortium (W3C) and Section 508 of the Rehabilitation Act issued in the United States federal government." (Retrieved March 24, 2013 from Blackboard's website)

Software/Technical Requirements (with Accessibility and Privacy Information)

The software/technical requirements for this course include:

- **HuskyCT/Blackboard (HuskyCT/ Blackboard Accessibility Statement, HuskyCT/ Blackboard Privacy Policy)**
- **Adobe Acrobat Reader (Adobe Reader Accessibility Statement, Adobe Reader Privacy Policy)**
- **Google Apps (Google Apps @ UConn Accessibility, Google for Education Privacy Policy)**
- **Microsoft Office (free to UConn students through uconn.onthehub.com) (Microsoft Accessibility Statement, Microsoft Privacy Statement)**
- **Dedicated access to high-speed internet with a minimum speed of 1.5 Mbps (4 Mbps or higher is recommended).**

Help

Technical and Academic Help provides a guide to technical and academic assistance.

This course is completely facilitated online using the learning management platform, HuskyCT. If you have difficulty accessing HuskyCT, you have access to the in person/live person support options available during regular business hours through the Help Center. You also have 24x7 Course

Minimum Technical Skills

To be successful in this course, you will need the following technical skills:

- **Use electronic mail with attachments.**
- **Save files in commonly used word processing program formats.**
- **Copy and paste text, graphics or hyperlinks.**
- **Work within two or more browser windows simultaneously.**
- **Open and access PDF files.**

University students are expected to demonstrate competency in Computer Technology. Explore the Computer Technology Competencies page for more information.

Evaluation of the Course

Students will be provided an opportunity to evaluate instruction in this course using the University's standard procedures, which are administered by the Office of Institutional Research and Effectiveness (OIRE).

Additional informal formative surveys may also be administered within the course as an optional evaluation tool.

Have a Great Semester