UCONN
UNIVERSITY OF CONNECTICUT

BIOLOGY 1107: Principles of Biology I

Spring Semester 2019

SYLLABUS for LECTURE

Section 001: (9:05-9:55AM, Mon, Wed and Fri): McHugh Hall, Room 102

Section 020: (10:10-11:00AM, Mon, Wed and Fri): McHugh Hall, Room 102

Credits: 4
Format: Lecture M, W, F for 50 minutes each, 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: Thomas D. Abbott
Email: thomas.abbott@uconn.edu
Office Hours/Availability: By appointment

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

- **Biological Science Custom 3rd Ed.**, by Scott Freeman (2014) Benjamin Cummings.
- **Laboratory Manual:** Biology 1107 Laboratory Manual, Fall 2018/Spring 2019 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 and technology and their impact upon the world and human society.

5. (LAB) Use lab equipment, such as spectrophotometer, micro-pipette, gel electrophoresis apparatus, probe-ware, scalpels, microscopes, glassware, chemicals, or biological specimens, to perform experiments.

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.

Topic Schedule

Date	Topic	Textbook Reading
Wed. 01/23	Molecules of Life: Water and Carbon: The Chemical Basis of Life	pp 55-75
Fri. 01/25	Molecules of Life: Water and Carbon: The Chemical Basis of Life	pp 55-75
Mon. 01/28	Molecules of Life: Protein Structure and Function	pp 78-91
Wed. 01/30	Molecules of Life: Protein Structure and Function Nucleic acids and RNA	pp 78-91 pp 93-104
Fri. 02/01	Molecules of Life: An Introduction to Carbohydrates	pp 107-117
Mon. 02/04	Molecules of Life: Lipids, Membranes and the First Cells	pp 119-126
Wed. 02/06	Molecules of Life: Lipids, Membranes and the First Cells	pp 127-138
Fri. 02/08	Cell Structure and Function: Introduction to Metabolism	pp 171-186
Mon. 02/11	Cell Structure and Function: Cellular Respiration and Fermentation	pp 189-208
Wed. 02/13	Cell Structure and Function: Cellular Respiration and	pp 189-208

	Fermentation	
Thur. 02/14	**Testing Center: Exam I**	
Fri. 02/15	Gene Structure and Expression: DNA, Gene Synthesis and Repair	pp 316-332
Mon. 02/18	Gene Structure and Expression: How Genes Work	pp 335-346
Wed. 02/20	Gene Structure and Expression: Transcription, RNA Processing and Translation	pp 348-363
Fri. 02/22	Gene Structure and Expression: Transcription, RNA Processing and Translation	pp 348-363
Mon. 02/25	Cell Structure and Function: Cell-Cell Interactions	pp 234-240
Wed. 02/27	Cell Structure and Function: Cell-Cell Interactions	pp 240-247
Fri. 03/01	**Testing Center: Exam II**	
Mon. 03/04	Gene Structure and Expression: The Molecular Revolution: Biotechnology and Beyond	pp 398-410
Wed. 03/06	Gene Structure and Expression: The Molecular Revolution: Biotechnology and Beyond, finished	pp 410-415
Fri. 03/08	Gene Structure and Expression: Control of Gene Expression in Bacteria	pp -367-376
Mon. 03/11	Gene Structure and Expression: Control of Gene Expression in Eukaryotes	pp 379-388
Wed. 03/13	Gene Structure and Expression: Control of Gene Expression in Eukaryotes, finished	pp 388-393
Fri. 03/15	Gene Structure and Expression: Mendel and the Gene	pp 289-302
Mon-Fri 03/18-22	**Spring Recess**	
Mon. 03/25	Gene Structure and Expression: Mendel and the Gene	pp 302-312
Wed. 03/27	**Testing Center: Exam III**	
Fri. 03/29	How Animals Work: Structure and Basic Physiology	pp 818-826
Mon. 04/01	How Animals Work: Surface/Volume Ratio and Bioenergetics	pp 826-834
Wed. 04/03	How Animals Work: Basic Nutrition	pp 855-860
Fri. 04/05	How Animals Work: Steps of Digestive Processes	pp 860-871
Mon. 04/08	How Animals Work: Gas Exchange	pp 874-888
Wed. 04/10	How Animals Work: Circulation, blood composition and cardiovascular disease	pp 888-896
Fri. 04/12	How Animals Work: Osmoregulation	pp 836-844
Mon. 04/15	How Animals Work: Kidney Structure and Function	pp 844-852
Tues. 04/16	**Testing Center: Exam IV**	
Wed. 04/17	How Animals Work: Electrical Signals in Animals, (I)	pp 899-907
Fri. 04/19	How Animals Work: Electrical Signals in Animals, (I) and (II)	pp 908-913
Mon. 04/22	How Animals Work: Musculoskeletal Systems Movement	pp 942-950
Wed. 04/24	How Animals Work: Chemical Signals in Animals	pp 961-978
Fri. 04/26	How Animals Work: Chemical Signals in Animals	pp 970-978
Mon. 04/29	How Animals Work: Reproductive Cycles	pp 999-1002
Wed. 05/01	How Animals Work: The Immune System, (I)	pp 1008-1013
Fri. 05/03	How Animals Work: The Immune System, (II)	pp 1013-1026
Mon. 05/06	**Testing Center: Exam V** Note: Material Covered: (04/11-04/27)	

Course Requirements and Grading

Summary of Course Grading:

Course Components	Weight
5 Exams	60%
Laboratory	40%

Exams:
There will be five exams, each covering 1/5 of the course material. Exams will be held at the Testing Center unless otherwise noted. Check the HuskyCT lecture site for announcements. Exam grades will be posted to your HuskyCT lecture section.

- Exam I: Thursday, February 14th, 2019 at (Testing Center)
- Exam II: Friday, March 1st, 2019 at the (Testing Center)
- Exam III: Wednesday, March 27th, 2019 at the (Testing Center)
- Exam IV: Tuesday, April 16th, 2019 at the (Testing Center)
- Exam V: Monday, May 6th, 2019 at the (Testing Center)

Exam format, content and point value: Exam format, content and point value: All five exams will consist of 50 questions in multiple-choice format. *Exams will be primarily based on lecture material, but will also include material from assigned text readings and the study guides. Please take special note: the fifth exam is given during the final exam week and as such may cause some students to assume then that they have two hours instead of the usual 50 minutes as was the case for the four earlier in-class exams that semester. This is not the case and the time granted for this exam is still only 50 minutes. The average of the five exam scores will comprise 60% of your course grade. 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 and will be computed after the fifth exam. Your performance in the lab will contribute the remaining 40% of your course grade.

Exam location: Unless otherwise noted, all exams during the semester will be held at the Testing Center and all exams are fifty minutes long.

Exam times: During the semester, exams at our Testing Center are held on testing days from 8:00AM on the hour until 6:00 or 7:00PM depending on center availability and class sizes that semester. To register for an exam time at the Testing Center, use the following link: Go to the Testing Center webpage (you will be prompted to log in with your Net-Id).

Exams for students with special needs: If you have a documented learning disability, please see the instructor at least one week before the first exam and bring any paperwork you may have been given by CSD.

Makeup Exam Policy: Makeup exams are available only to students who have a legitimate excuse for missing an exam, such as illness, a scheduled job interview, athletic team or out of town event, death in the immediate family, etc. If you know in advance that you must miss an exam, see the instructor prior to this date and bring documentation to support your anticipated absence. If you miss an exam unexpectedly because of last minute illness or accident, contact the instructor when you return to campus in person or through (e-mail if you will be away for some time) and provide documentation of your situation.

Makeup Exam Dates: Makeup exams will be given on the following days for those students who missed the scheduled exam and who have received permission to make up the exam. Please be made aware: The makeup exam format may be strictly short-answer, short essay, multiple-choice or any combination of question styles.

- Makeup for Exam I: Friday, 02/15/2019 at 2:00PM in Torrey Life Science, Rm. 212
- Makeup for Exam II: Monday, 03/04/2019 at 2:00PM in Torrey Life Science, Rm. 212
- Makeup for Exam III: Thursday, 03/272019 at 2:00PM in Torrey Life Science, Rm. 212
- Makeup for Exam IV: Wednesday, 04/17/2019 at 8:00AM in Torrey Life Science, Rm. 212

- Makeup for Exam V: Tuesday, 05/07/2019 at 8:00AM in Torrey Life Science, Rm. 212.

Laboratories

The MWF 9:05 AM lecture is linked with lab sections 001L – 014L. The MWF 10:10 AM lecture is linked with lab sections 020L – 033L. You must attend the lecture and lab for which you are registered. Even though labs are identical in content, it is not possible for us to "mix and match" by allowing students in one lecture section to attend labs linked to the other lecture section.

(1) Laboratory start date: Labs begin the first week of classes, Tuesday, August 28, 2018.

(2) Location: Bronwell (Engineering III) rooms 118,119,120 - Check your class schedule for your room assignment.

(3) 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.

(4) 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 Support including access to live chat, phone, and support documents.

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!