



University of Connecticut

Early College Experience

Biology 1107 & 1108 Handbook

2020

Created by Tom Abbott, Faculty Coordinator Biology
University of Connecticut

UConn ECE Biology 1107/1108 Mission Statement

The UConn Early College Experience Biology program is administered by the University of Connecticut's Department of Undergraduate Education and enables high school students the opportunity to take college Biology courses that they may transfer to many colleges and universities throughout the country. This is accomplished through a cooperative effort on behalf of the University and partner high schools, based upon mutually agreed to teaching standards, curricula and assessments in accordance with the UConn Biology Department.

TABLE OF CONTENTS

Contact Information	Page 3
Instructor Certification Information	Page 4-5
ECE Biology Policies & Course Information	Page 6-8
Grading Scale & Online Grading	Page 9
Course Content	Page 10-11
Appendix I – National Standards	Page 12
Appendix II – Biology 1107 & 1108 Syllabi	Page 13-18

University of Connecticut UConn Early College Experience Fairfield Way Unit 4171
Storrs, CT 06269-4171
Phone: 860-486-1045 Fax: 860-486-0042

UConn ECE Program Office Staff:

Brian A. Boecherer, Executive Director: brian.boecherer@uconn.edu

Jessica Dunn: Assistant Director, and Director of Student Enrichment:
jessica.parker@uconn.edu

Nella Quasnitschka, Associate Director-Academic Outreach and Director of Pre-College
Summer: nella.quasnitschka@uconn.edu

Stefanie Malinoski: Program Specialist, Certification and Workshops:
stefanie.malinoski@uconn.edu

Erin Blanchette, Administrative Coordinator-Billing and Financials:
erin.blanchette@uconn.edu

Melanie Banks: Program Assistant, Academic Standards, Associate Director-Pre-College
Programs: melanie.ochoa@uconn.edu

Carissa Rutkauskas: Program Specialist-Outreach and Evaluation:
carrisa.rutkauskas@uconn.edu

Todd Blodgett: Program Assistant-Registration Coordinator: todd.blodgett@uconn.edu

Faculty Coordinator: Thomas D. Abbott

University of Connecticut, Department of Molecular and Cell Biology
91 N. Eagleville Road, U-3125 Storrs, Connecticut 06269-3125
Phone: 860-486-2939
Email: thomas.abbott@uconn.edu

Program Project Specialist: Jean Laughman

University of Connecticut
Program Specialist
ECE Biology

Applying for Certification as a UConn ECE Biology Instructor

ECE Certification Requirements

One primary feature of UConn ECE is to allow students to take college courses for credit while in high school. In addition, any new instructor certified to teach an ECE course is considered adjunct faculty. It is then only fair to assume that the parity of the ECE experience and the University experience for both instructors and students are as close as possible. To ensure the equity and fairness of UConn ECE, new and continuing instructor certifications will be based on the fulfillment of the requirements as outlined in this handbook.

Prerequisites for Certification

Academic Requirements

The minimum degree requirement for instructors wishing to teach UConn ECE biology courses will be a Masters degree in a subject area, such as cell biology or animal physiology, and have at a minimum 3 years of teaching experience at or above the high school level in the biological sciences. Additionally, the candidate should present on transcripts a diverse and deep breadth of course work and laboratory course work as both an undergraduate and as a graduate student and per degree post a 3.00 Total Science GPA or higher. Applicants will not be considered unless they provide a detailed lecture and lab syllabus for their proposed Bio 1107/1108 courses with their application. Certification also requires an interview with the ECE Biology Coordinator at the Storrs campus.

Applicants for Bio 1107/1108 should have documented coursework in the following areas:

- General Biology
- General Chemistry
- Organic Chemistry
- General Physics
- Mathematics-pre-calculus or higher

Additionally, Biology 1107 applicants must present previous course work in the following:

- Genetics
- Microbiology
- Cell biology
- Animal Physiology, Comparative Anatomy or Human Physiology
- **One semester of Biochemistry is recommended**

Additionally, Biology 1108 applicants must present previous course work in the following:

- Plant Physiology or Botany
- Ecology or Environmental/ Conservation Science
- Invertebrate and Vertebrate Zoology
- Evolution
- **One semester of Animal behavior course work is recommended**

Laboratory Requirements

A demonstrated ability by the instructor to provide a comprehensive and rigorous laboratory experience for the student inline with what is provided and expected at the Storrs University Campus for the same course. As but one example, in this context, inline additionally will mean that a strong dissection component must be apparent in the Biology 1107 course.

Additional attributes considered once prerequisites have been reviewed/demonstrated:

Work experiences in research or applied aspects of biology, and recommendations.

Requirements

Requirement 1: Application Deadline

The instructor certification process is an essential program component and represents a high level of professional trust and respect. Instructors interested in certification should begin the process one year prior to the academic year the course will begin. The certification deadline for instructors looking to teach a UConn ECE course is January 31st, however early applications are **highly encouraged**.

Details on the certification application can be found on the UConn ECE website at www.ece.uconn.edu.

Requirement 2: Academic Qualifications

The minimum degree requirement for high school instructors wishing to teach UConn ECE Biology courses is an M.S. degree in a subject area, such as cell biology or animal physiology. Additionally, the applicant's transcripts and work experience should demonstrate a sufficient breadth of biology coursework including laboratory and/or research experience coupled with their teaching experience within the discipline. **Please see our website for what constitutes prior course work and teaching experience preferred to teach 1107 and 1108.**

Requirement 3: Course Syllabi and Text

It is recommended that teachers seeking ECE certification adopt the Biology 1107/1108 syllabi (found on pages 7-10). If a teacher requests to sequence their material differently his/her application will not be considered unless the following are provided: **course syllabi, and a pacing-guide** specifically detailing a day-to-day schedule of lectures and labs, a complete description of laboratory activities, itemized lists and details of the laboratory resources available at the high school (please complete the enclosed questionnaire), and a comprehensive explanation of how students will be graded in the proposed course.

Requirement 4: Site Visits

Site visits will be required prior to final certification. At these early visits, the faculty coordinator will meet with the instructor, their students and others that may be involved in the course. Lab and lecture facilities will be assessed for their capabilities to make the UConn ECE course function as intended.

Certification

Applicants who satisfy the above requirements, and are approved by the faculty coordinator, will receive a **one year provisional certification** as a UConn ECE Biology instructor**. During this time, the faculty coordinator will closely monitor the progress and assess the development of the ECE course. This is also intended to be a time for close collegial interaction between new ECE Biology instructors and UConn faculty. The mutual development of teaching practices essential to providing a quality University experience will be encouraged. After the one year provisional period has passed, the faculty coordinator will assess the instructor and make a recommendation for full certification.

**** Depending on the instructor's credentials, an ECE instructor may be certified to teach Biology 1107, 1108, or both.**

ECE BIOLOGY POLICIES & COURSE INFORMATION

I. ECE Biology vs. AP[®] Biology

1.1 As stated in the national standards, (please see Appendix I) UConn ECE must be distinct from Advanced Placement. UConn ECE neither oversees nor is responsible for the AP course curriculum. UConn ECE is only responsible for coordinating and ensuring that the curricula of ECE courses mirror the curricula of their counterparts taught at the University of Connecticut. UConn ECE credit can only be awarded by taking an ECE course.

Please note: UConn ECE is aware that students may elect to take an AP exam in a subject area and be given college credit for the course if they score at or above a designated level. It is then conceivable that an AP course could be “nested within” an ECE course but solely, an AP course cannot be a substituted for an ECE course.

II. Maintaining Certification for ECE Biology Instructors**

In order to remain certified, ECE Biology instructors will need to comply with the following:

2.1 Make every effort to administer an ECE Biology course that is pedagogically comparable in content, timing, and level of difficulty to the Biology 1107 and 1108 courses offered at the University of Connecticut (Storrs campus).

2.2 Attend a UConn ECE Biology professional development workshop at least once every two years. Attendance and participation for ninety percent (90%) of the workshop is required.

2.3 At the end of each academic year submit, between June 1 and July 15:

A) An Excel spreadsheet with the class score (based on 85% of grade), exit exam score (based on 15% of grade) and final grade score. These can all be submitted via HuskyCT and the appropriate folder.

III. ECE Biology 1107 and 1108 Course Information

3.1 Course Timing

Biology 1107 and Biology 1108 **can** be taught as a year-long course provided there is an official recognition of this action between the ECE Coordinator, the University’s ECE main office and the instructor. Approval for this will be handled on a case by case basis. Ideally, we would like each course completed in one half of the high school academic year. At UConn, each semester-long course involves forty 50-minute lectures and thirteen 3-hour laboratory periods. Both Biology 1107 and 1108 are offered each semester. **Depending on the schedule at your high school, adjustments to lecture and laboratory time periods may be necessary. However, the total instructional hours for lecture and lab (34 hours and 39 hours respectively) must be honored.**

3.2 In-Class Instruction

While instructors may elect to include additional readings during the summer, over breaks or during the school year, the course material (as outlined in the Biology 1107 and 1108 syllabi) should be covered in the normal high school academic period. It is assumed that the ECE Biology instructor is personally responsible for covering the course material for examinations, quizzes, and other graded assignments in the course. **The University understands that at times you may want to use a guest lecture and this is fully supported.**

3.3 ECE Biology Student Guidelines

- A) Historically, the ECE Biology course **had required prerequisites** and is intended for motivated high school juniors or seniors. Exceptions to this might be high schools with honors tracts where students may have taken biology as freshman and chemistry as sophomores.

Prerequisites for an ECE course are: A prior course in general biology and a course in high school level chemistry.

- B) However, as high schools begin to rearrange the sequencing of their science subjects to align the instruction more effectively with the Next Generation Science Standards, (NGSS) it may at times become necessary to reassess the student guidelines. This would also apply to private, charter and magnet schools.

- C) Exams should assess multiple chapters, as modeled on the syllabi shown in Appendix II of this manual.

Please note: The University recognizes, respects and understands that change is inevitable, should be encouraged and can be pedagogically sound for both instructors and students. These deviations of course sequences from the norm would then be reviewed on a case-by-case basis for subsequent approval prior to implementation at the high school.

3.4 Student Attendance

As stated in the course syllabi, no student is permitted to miss more than 20% of the laboratory activities and still receive UConn credit. This includes students with legitimate excuses for missing a laboratory (e.g., serious illness). In such cases, ECE biology instructors may delay the assignment of a student's grade until the same or a comparable hands-on laboratory experience is completed. Paper makeup assignments cannot substitute for a hands-on laboratory experiences.

3.5 Grading Scales

The following Grade Scale is used to assign letter grades in the UConn Biology 1107/1108 courses based upon the percentage of course points earned by the student.

Grade Scale	Percentage of course points earned
A	93-100%
A-	90-92%
B+	87-89%
B	83-86%
B-	80-82%
C+	77-79%
C	73-76%
C-	70-72%
D+	67-69%
D	63-66%
D-	60-62%
F	<60%

3.7 Grade Reporting

- A) Final student grades must be entered into the UConn Student Administration System (SAS). Directions on how to enter grades through the SAS are provided to instructors at the end of each semester and are also available on the UConn ECE website and the UConn ECE Technology Quick Start Guide. UConn is aware that the entering of final grades may vary due to each high schools unique semester schedules as well as other confounding variables such as snow days. **The UConn Registrar's office would like to receive them as soon as possible for operational reasons. The posting of grades should be no later than one week following the last day that grades were due in the high school or July 1st, which is a UConn ECE policy.**
- B) Students must receive separate grades for Biology 1107 and Biology 1108 and these grades must at all times reflect a separation of and adherence to the division of course material for Biology 1107 and Biology 1108 (see pages 7 - 11).

IV. Biology 1107 and 1108 Course Content

4.1 Acceptable College Textbooks, as examples recent editions of:

Biology, Campbell and Reece; Benjamin Cummings

Biological Science, Freeman; Prentice Hall

Biology, Raven et al.; McGraw Hill

Life, Sadava. et al.; Sinauer Assoc, W.H. Freeman

Biology, Russell, et al; Cengage

4.2 Course Content Summary

Note: ECE Biology Instructors, within reason, will adhere to the content divisions for the Biology 1107 and 1108 courses outlined in (Appendix II course syllabi). ECE instructors do have the flexibility to teach the units within each course, and the material within each unit, in a different sequence.

Students receiving credit for ECE Biology 1107 and Biology 1108 must have covered and received a final passing grade of ‘C’ or above on the following units:

Biology 1107:

Cell Biology and Biochemistry

Genomics, Bioinformatics and Proteomics

Animal Form and Function

Biology 1108:

Evolutionary Biology

Genetics/Biological Diversity

Plant Form and Function

Ecology

4.3 Lecture Component of Courses

- A. Exams:** A minimum of four (4) exams is required for each course and must be administered by the ECE Biology Instructors. UConn lecture exams typically consist of 50 multiple-choice questions. ECE Biology Instructors are encouraged to write comparable exams; however, these may contain a variety of question types (i.e., short answer, short essay, matching, labeling of diagrams, etc.). **Additionally, as previously mentioned, single chapter exams implemented throughout a semester is discouraged.** UConn introductory biology classes can run as high as 400 students. Therefore, our exams tend to be less varied in question style.

Please note: In addition to the grade that the student receives in the 1107 or 1108 course, (worth 85%), each student will take a Course Exit Exam (worth 15%) written by University Professors and administered by the ECE Instructor. The Exit Exams are cumulative and consist of fifty multiple-choice questions.

- B. **Quizzes:** ECE Biology Instructors may incorporate quizzes or other in-lecture assessment tools as long as the total value of these assessments does not exceed 10% of the lecture grade. Quiz scores cannot be substituted for exam scores.

NOTE: "Extra credit" assignments are NOT permitted. The only assessment tools allowed in the calculation of a student's grade are those specified in the course syllabus at the beginning of the semester.

4.4 Laboratory Component of Courses (35% of total course grade)

- A. **Lab Manuals:** UConn, Storrs publishes its own laboratory manuals for Biology 1107 and 1108, which can be purchased at the UConn Co-op bookstore. **Please note:** all Certified Instructors have access to digital copies of the laboratory manuals on HuskyCT. If you have questions regarding preparation of laboratory materials or lab exercises in general, please do not hesitate to contact Dr. Christopher Malinoski, Laboratory Supervisor, at c.malinoski@uconn.edu

Other published manuals provide acceptable laboratory exercises as well as purchased kits from biological supply companies such as Carolina Biological, Ward's Natural Science Est., Edvotek, etc. On the Internet, "Access Excellence", is a good starting point if you would like to investigate alternate options.

- B. Some AP[®] Laboratory kits may be substituted for some of the UConn Biology 1107/1108 labs. However, please note that UConn uses thirteen (13) different laboratory topics for each biology course for a total of **26 different 3-hour laboratories for the Biology 1107/1108 course sequence**. ECE instructors must offer at least this many different laboratories to remain certified as ECE Biology instructors. In addition, the laboratory content should be comparable to that offered at the Storrs campus.
- C. **Quizzes:** Laboratory quizzes are given at the beginning of every laboratory session and include approximately 10 free-response questions designed to assess the students learning from the previous laboratory exercise.
- D. **Homework Assignments:** Students are usually given homework assignments designed to either prepare for upcoming laboratory exercise or to reinforce the material learned the previous laboratory exercise.
- E. **Laboratory Reports:** ECE Biology students are required to complete at least one (1) formal writing assignment during EACH course. The reports should model the format described in each of the Biology 1107 and 1108 laboratory manuals.

Appendix I

NACEP National Standards

Prologue The National Alliance of Concurrent Enrollment Partnerships (NACEP) was established during the annual meeting in Utah in November 1999 as an organization of education professionals who administer or participate in Concurrent Enrollment Partnerships (CEP).

Mission The National Alliance of Concurrent Enrollment Partnerships (NACEP) links college school programs offering college courses in high schools. NACEP supports and promotes its constituent programs through quality initiatives, program development, national standards, research, and communication.

Definition Through Concurrent Enrollment Partnerships, qualified students can earn college credit prior to high school graduation. CEPs differ from other pre-college credit programs because high school instructors teach the college courses during the normal school day. Such programs provide a direct connection between secondary and post-secondary institutions and an opportunity for collegial collaboration. Although courses in some CEPs may have some elements or characteristics of the programs stated below, CEPs are **distinct** programs from the following:

A. Programs in which the high school student travels to the college campus to take courses prior to graduation during the academic year or during the summer.

B. Programs where college faculty travel to the high school to teach courses to the high school students.

C. The College Board Advanced Placement Program and the International Baccalaureate Program where standardized tests are used to assess students' knowledge of a curriculum developed by a committee consisting of both college and high school faculty.

Appendix II

Examples of UConn Biology 1107 and 1108 Fall 2019 Syllabi Lecture and Laboratory Content Schedules

Biology 1107 Lecture

Lecture Schedule Part I: Cells-Molecules-Energy-Transport-DNA-Genetics/Gene Action-Biotechnology

<u>Date</u>	<u>Readings</u>	<u>Lecture Topics</u>	<u>Text Readings</u>
Mon. 08/26	Chap. 2	Life, Chemistry and Water	pp 24-34
Wed. 08/28	Chap. 2	Life, Chemistry and Water	pp 35-40
Fri. 08/30	Chap. 3	Biological Molecules: Proteins	pp 57-65
Mon. 09/02	Labor Day no classes		
Wed. 09/04	Chap. 3	Proteins completed Biological Molecules: Nucleotides and Nucleic Acids	pp 65-69
Fri. 09/06	Chap. 3	Biological Molecules: Carbohydrates	pp 44-52
Mon. 09/09	Chap. 3	Biological Molecules: Lipids	pp 52-56
Wed. 09/11	Chap. 5	Membranes and Transport	pp 104-122
Fri. 09/13	Chap. 6	Energy, Enzymes, and Biological Reactions	pp 126-141
Mon. 09/16	Chap. 7	Cellular Respiration: Harvesting Chemical Energy	pp 146-156
Wed. 09/18	Chap. 7	Cellular Respiration: Completed	pp 156-165
Thur. 09/19	Exam I-Testing Center		
<hr/>			
Fri. 09/20	Chap. 14	DNA Structure and Replication	pp 300-320
Mon. 09/23	Chap 14	DNA Structure and Replication: Completed	
Wed. 09/25	Chap. 15	From DNA to Protein:	pp 323-331
Fri. 09/27	Chap. 15	From DNA to Protein: Continued	pp 331-336
Mon. 09/30	Chap. 15	From DNA to Protein: Completed	pp 336-346

Wed. 10/02	Chap. 9	Cell Communication:	pp 192-200
Fri. 10/04	Chap. 9	Cell Communication:	pp 200-210
<hr/>			
Mon. 10/07	Exam II-Testing Center		
Wed. 10/09	Chap. 18	DNA Technologies:	pp 407-428
Fri. 10/11	Chap. 19	Genomics and Proteoms	pp 432-453
Mon. 10/14	Chap. 16	Regulation of Gene Expression: Prokaryotes	pp 354-360
Wed. 10/16	Chap. 16	Regulation of Gene Expression: Eukaryotes	pp 361-381
		Regulation of Gene Expression: Eukaryotes: Completed	pp 361-381
Fri. 10/18	Chap. 12	Mendel, Genes, and Inheritance:	pp 251-264
Mon. 10/21	Chap. 12	Mendel, Genes and Inheritance:	pp 264-271
Tue: 10/22	Exam III-Testing Center		

Part II. Animal Structure and Function

<u>Date</u>	<u>Readings</u>	<u>Lecture Topics</u>	<u>Text Readings</u>
Wed. 10/23	Chap. 38	Introduction to Animal Organization and Physiology:	pp 912-926
Fri. 10/25	Chap. 48	Ectothermy, Endothermy and Bioenergetics	pp 1135-1140
Mon. 10/28	Chap. 47	Animal Nutrition:	pp 1093-1103
Wed. 10/30	Chap. 47	Animal Nutrition:	pp 1103-1114
Fri. 11/01	Chap. 46	Gas Exchange: The Respiratory System	pp 1074-1089
Mon. 11/04	Chap. 46	Gas Exchange: Completed	
Wed. 11/06	Chap. 44	The Circulatory System	pp 1031-1048
Fri. 11/08	Chap. 48	Regulating the Internal Environment:	pp 1118-1122
Mon. 11/11	Chap. 48	Kidney Structure and Function	pp 1122-1134

Tue. 11/12

Exam IV-Testing Center

Wed. 11/13	Chap. 39	Information Flow and the Neuron:	pp 930-937
Fri. 11/15	Chap. 39	Information Flow and the Neuron :	pp 937-947
Mon. 11/18	Chap 43	Muscles, Bones and Body Movements:	pp 1016-1023
Wed. 11/20	Chap 42	The Endocrine System:	pp 994-1012
Fri. 11/22	Chap. 49	Animal Reproduction:	pp 1144-1154
Mon-Fri 11/25-29	Thanks Giving Recess		
Mon. 12/02	Chap. 45	Defense against Disease:	pp 1052-1057
Wed. 12/004	Chap. 45	Defense against Disease:	pp 1057-1070
Fri. 12/06	Lecture Hall-Exam V		

Biology 1107 Laboratory

BIOL 1107 - Laboratory Exercise & Assignment Schedule			Spring 2020
	Date*	Lab Exercise(s)	Items Due
1	1/21	Lab 1: Laboratory Basics	In-Class Assignment (ICA) 1: Lab Basics
2	1/28	Lab 2: Amino Acids & Proteins	Pre-labs 2A & 2B
			Quiz 1
			HMWK 1: Hypothesis Practice
3	2/4	Lab 3: Microscope	Pre-lab 3
		Lab 4: Semi-Permeable Membranes	Quiz 2
			ICA 2: Semi-Permeable Membranes
			HMWK 2: Lab Report Skills
4	2/11	Lab 5: Cellular Respiration	Pre-labs 4A & 4B
			Quiz 3
5	2/18	Lab 6: Chromosomes & Karyotypes	Pre-lab 5
		Lab 7: Genetics I: DNA Isolation & PCR	Quiz 4
			LR 1: Cell Respiration
6	2/25	Lab 8: Genetics II: Agarose Gel Electrophoresis	Pre-lab 6
		Lab 9: Gene Regulation	Quiz 5
		Lab 10: Protein Synthesis	ICA 3: Gene Regulation
7	3/3	Lab 11: Intro. to Bioinformatics	Pre-lab 7
		Students bring laptop to lab!	Quiz 6
			ICA 4: Bioinformatics (Physical)
			HMWK 3: Genetics
8	3/10	Lab Practical Exam I	Problem Set 1
Spring Break (Week of 3/17)			
9	3/24	Lab 12: Histology	Pre-lab 8
		Lab 13: Skeletal System	ICA 5: Histology & Skeletal
		Lab 14: External Anatomy	
10	3/31	Lab 15: Digestive System	Pre-lab 9
			Quiz 7
11	4/7	Lab 16: Cardiovascular System	Pre-lab 10
			Quiz 8
			LR 2: Digestive System
12	4/14	Lab 17: Respiratory	Pre-lab 11
		Lab 18: Excretory System	Quiz 9
			ICA 6: Dissection Project (Physical)
13	4/21	Lab 19: Nervous System	Pre-lab 12
		Lab 20: Immune System	Quiz 10
			ICA 7: Immune
14	4/28	Lab Practical Exam II	Problem Set 2
	*Date refers to "Week of." Example: Date reads 9/1, meaning that listed homework, reports, and problem sets are generally due the week of 9/1, and are specifically due at the start of your scheduled lab section that week. Quizzes and ICAs are completed during lab.		

Biology 1108

BIOL1108 Fall 2019 Schedule of topics				
Week #	Date:	Lect #	Chap.	Lecture Schedule
1	27-Aug	1	20	Evolution
	29-Aug	2	20	Evolution
2	03 Sept	3	21	Species and Speciation
	05 Sept	4	22	Evolutionary Patterns
3	10 Sept	5	23	Human Origins and Evolution
	12 Sept	6	25	Eukaryotic Cells
4	17 Sept	7	26	Being Multicellular
	19 Sept	8	27	Plant Form, Function, and Evolution
5	24 Sept	Exam		Unit 1 Exam (Lectures 1-7)
	26 Sept	9	8	Photosynthesis
6	1-Oct	10	28	Plant Reproduction
	3-Oct	11	29	Plant Growth and Development
7	8-Oct	12	30	Plant defense and behavior
	10-Oct	13	31	Plant Diversity - Non-vascular plants
8	15-Oct	14	31	Plant Diversity - Vascular plants
	17-Oct	15	32	Fungi
9	22-Oct	Exam		Unit 2 Exam (Lectures 8-15)
	24-Oct	16	42	Early animal diversity
10	29-Oct	17	42	Ecdysozoa and Lophotrochozoa
	31-Oct	18	42	Echinodermata and Chordata
11	5-Nov	19	43	Behavioral Ecology
	7-Nov	20	44	Population Ecology
12	12-Nov	21	45	Species Interactions and Communities
	14-Nov	22	46	Ecosystem Ecology
13	19-Nov	23	47	Climate and Biomes
	21-Nov	24	48	The Anthropocene
14				
15	3-Dec	25	48	The Anthropocene and wrap up
	5-Dec	Exam		Unit 3 Exam (Lectures 16 - 25)
16				Final Exam Week Final Exam: Cumulative (Lectures 1-25)

Biology 1108: Principles of Biology Laboratory Fall 2019			
Session	Date:	Laboratory Schedule	Related Graded Work
1	27-Aug	Introductions and Orientation Ex. 1: Scientific Method	Lab 1 Worksheet (Due Next Week)
2	03 Sept	Ex. 2: Evolution and Classification	Pre-Lab: Session 2 Lab Safety Quiz Deadline!!
3	10 Sept	Ex. 3: Population Genetics	Pre-Lab: Session 3 Lab Quiz 1: Ex. 2
4	17 Sept	Ex. 4: Microscopes Ex. 5: Cell Types, Greenhouse	Pre-Lab: Session 4 Lab Quiz 2: Ex. 3
5	24 Sept	Ex. 6: Leaf, Stem & Root structure	Pre-Lab: Session 5 Lab Quiz 3: Ex. 4 & 5
6	01 Oct	Ex. 7 Photosynthesis & Transpiration	Pre-Lab: Session 6 Lab 7 Worksheet (Due Next Week)
7	08 Oct	Lab Practical Exam 1 (covering Session 1 to 6)	Lab Practical Exam 1 Biodiversity Collections Quiz 15 pt
8	15 Oct	Ex. 8: Evolution of Plants 1	Pre-Lab: Session 8
9	22 Oct	Ex. 9: Evolution of Plants 2 Greenhouse Scavenger Hunt (15 pts)	Pre-Lab: Session 9 Lab Quiz 4: Ex. 9
10	29 Oct	Ex. 10: Evolution of Animals 1	Pre-Lab: Session 10 Lab Quiz 5: Ex. 10
11	5-Nov	Ex. 11: Evolution of Animals 2	Pre-Lab: Session 11 Lab Quiz 6: Ex. 11
12	12-Nov	Ex. 12: Behavior	Pre-Lab: Session 12 Lab Quiz 7: Ex. 12 Lab 12 Worksheet (Due Next Week)
13	19-Nov	Ex. 13: Climate Change	Pre-Lab: Session 13
	26-Nov	Thanksgiving Break	
14	3-Dec	Lab Practical Exam 2 covering sessions 8-13	Lab Practical Exam 2

