**CHANGES ADAPTED DUE TO COVID-19**

**Exploring Biology BCOR 012,**

**Spring 2020 Syllabus**

**Sections C & F**

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| **Laboratory Coordinator:**  **Yainna Hernaiz-Hernandez**  107 Jeffords  Phone: 656-2810  Email: [yhernaiz@uvm.edu](mailto:yhernaiz@uvm.edu) | **Course Coordinator:**  **Laura Newman**  118 Marsh Life Science Bldg.  Phone: 656-5801  E-mail: [Laura.A.Newman@uvm.edu](mailto:Laura.A.Newman@uvm.edu) |

**Section C**: WMF 12:00-12:50 in Jeffords Hall 127

**Section F**: WMF 3:30-4:20 in Jeffords Hall 110

**Lab**: Labs are held once a week in either Jeffords 104 or 106 (check your course schedule for the day, time and location for your lab).

**Office hours**: MWF 1:00 p.m. to 2:30 p.m.

**Course Description**

BCOR 12 will cover topics in evolution, the diversity of life, behavior, ecology and conservation biology of plants and animals. All readings referred to here are chapters within the assigned text, which is **Campbell’s *Biology* 11th edition**. Other readings may be assigned and will be posted on the Web. We strongly recommend that you read the assigned material before coming to class. There will be in-class iClicker questions and homework assignments related to the readings.

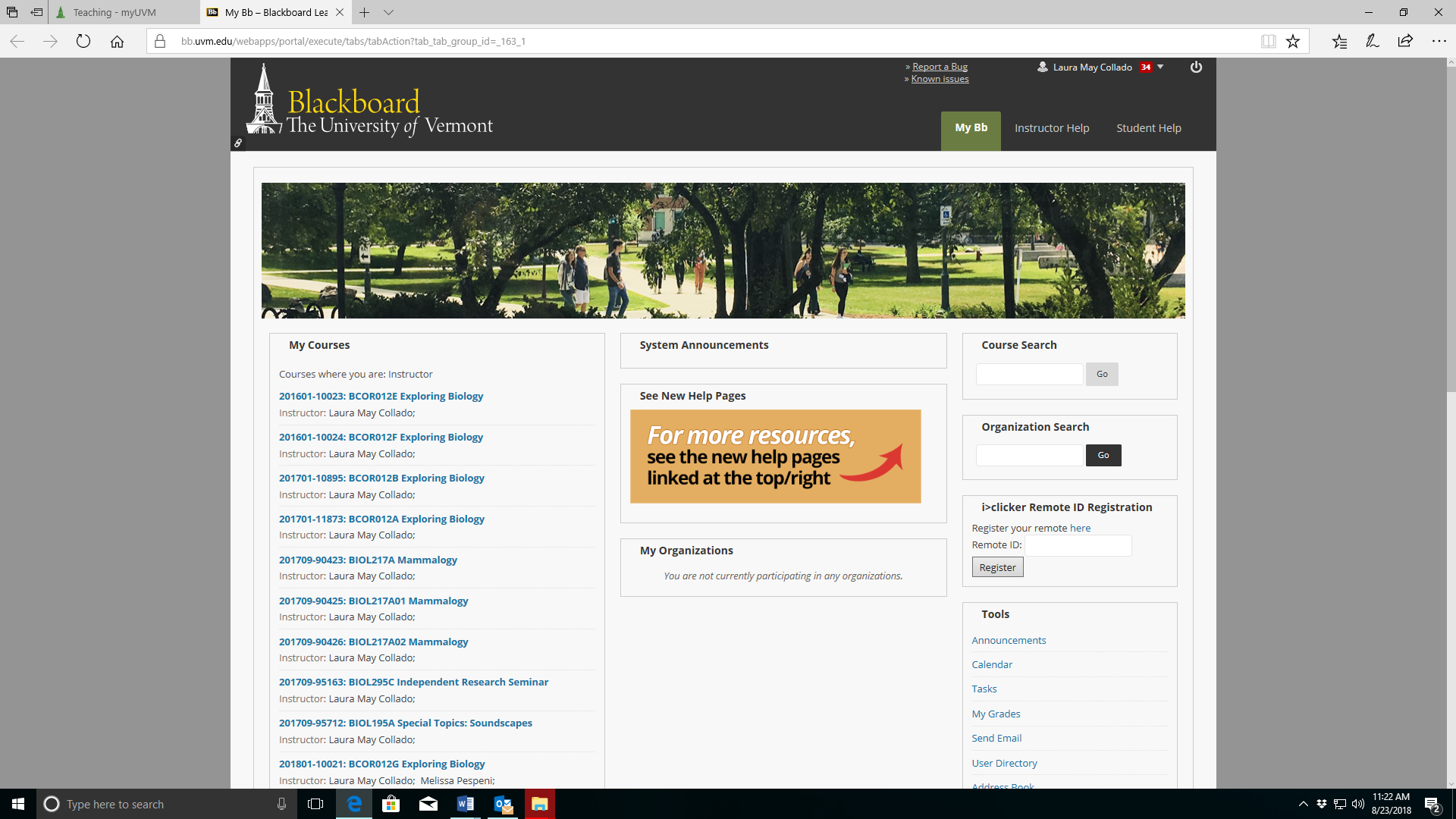
**LEARNING OBJECTIVES**

By the end of the course, you will be able to:

1. Articulate how biological processes work using the appropriate terminology. For example:
   1. Transmission genetics
   2. Evolution by natural selection
   3. Evolution of biological diversity
   4. Speciation
   5. Population regulation
2. Recognize and employ mathematical formulations of biological processes
   1. Mendelian genetics
   2. Hardy-Weinberg Equilibrium
   3. Exponential and logistic population growth
3. Identify hierarchical relationships in biology.
4. Recognize steps of the scientific method.
   1. Convert data into a summary figure, identify pattern, and use pattern to support a  conclusion.

**Required Texts/Technology**

1. **Textbook**: Campbell, N. A. and Reece, J.B. ***Biology*** 11th edition.
   * Access code for Master Biology. The access code is bundled with the cost of the new textbooks available at the UVM Bookstore.
   * If you purchase the e-book or a used book, you must also purchase the access code separately at <http://www.masteringbio.com>
2. **iClicker** remote for in-class assignments. Available at UVM Bookstore, used from other students, or online. Register your iClicker at the main page of your BB.



1. **Lab** Knisely, K. 2017. ***A student handbook for writing in biology***, 5th ed. Sinauer Associates. (for Lab)
2. **Blackboard**: There is a Blackboard site for our lecture sections, as well as a site for your individual lab section. We will use the Blackboard site to post announcements, lecture notes, PowerPoint slides, weekly blogs, and review materials, as well as for weekly exam-preparation question sets. Please attempt to find and access the blackboard site as soon as possible, in case you encounter problems: if you do, let your instructor know right away and we will work on finding a solution.
3. **Lectures**: will posted in Blackboard weekly, including a power point without audio, and audio lectures, with associated ‘iclickers’ and resources.

**Grading**

Your final grade will consist of an average of your midterm grades, final exam, lab grade, iClicker, pre-lectures assignments, Science Blog, and Mastering and the lab grade. The point breakdown is as follows:

We offer extra credit opportunities in the form of exam reflection and revision exercises made available on Blackboard after each of the 3 hourly exams are graded and returned. **No other extra credit opportunities are available.**

**Grading changes due to Corona Virus**

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| Hourly exams (4 exams @ 100 pts each, lowest exam weighted at 50%)  **Exam 1 February 7**  **Exam 2 March 20**  **Exam 3 April 13**  **Exam 4 May 7 (covering only new material chapters 32-34, 56)** | 50% |
| Mastering Homework Assignments | 14% |
| Science Blog/Pre-lecture questions/iClicker | 8% |
| Laboratory | 28% |
| **Total** | **100%** |

**Important note:** *In order to pass this course, you must achieve a passing grade in BOTH the lecture and laboratory portions of the class. Please don’t use high performance in one part to justify less effort in the other!*

**EXAMS**

There will be **four** hourly exams ~~and a cumulative exam in this course~~. **The hourly exams are in Blackboard and consist of 40 multiple choice questions** ~~given during the regularly scheduled lecture time and consist of 80% multiple-choice questions and 20% short answer questions~~. **Exams will be available from 9 a.m. to 5 p.m. in BB but once a student begins the exam must be completed within the hour (with exception for student with special accommodations)** **Exam are open book, but students are still expected to follow the UVM Academic Honesty Policy.**

**“I promise that this is my own work, and that I will not give or receive help from other people during this exam. I understand and agree to this policy”. No final exam will be administrated, instead there will be a 4th midterm exam only evaluating new material.** ~~The final exam consists of 50 multiple-choice questions of new material and 50 multiple-choice of old material.~~ ~~For the mid-term exams weight your personal lowest hourly exam score at 50%, so your lowest exam score will affect your exam total only by half. Due to this flexible policy,~~ **~~there will be no make-up exams~~**~~.~~ Hourly exams will ~~not be rescheduled to accommodate travel plans during the semester. The only legitimate excuse for rescheduling an exam is if you have 3 exams scheduled on one day or you are required to be off-campus for a university sponsored event or religious holiday. In such cases you may schedule to take the exam early, but not late. Discuss this with me as soon as possible.~~ **only accommodated if you have difficulties related to internet access, lack a computer access, or a family emergency (please contact me inmmediately),** or if you have **4** **or more** **proctored** in class final exams in a 36-hour period then, unless a mutually agreeable alternative time can be reached by the student and instructor, the make-up will be scheduled for the next day after the regularly-scheduled exam.

**ASSIGNMENTS**

**1. MASTERING BIOLOGY WEEKLY HOMEWORK (due Sundays at midnight)**

There will be weekly homework assignments to be completed online using Mastering Biology (<http://www.masteringbio.com>). Late homework will receive a penalty of 10% for each day it is late, up to a maximum penalty of 70%. However, if you miss the deadline, it is still worth completing the homework to receive partial credit. The first homework assignment is on **Sunday January 18** by midnight. Check the website for assignment due dates. I urge you to use Mastering Biology’s Study Area where you can find numerous tutorials, videos, and practice tests.

**Register for Mastering Biology:**

1. Go to [www.masteringbio.com](http://www.masteringbio.com/), select ‘Students’
2. If you purchased the textbook new, then you should have an access code. Select ‘yes’ you have a code and enter it in the appropriate box.
3. If you purchased a used textbook, then you will have to buy access to the website separately. Click ‘no’ and choose our textbook (Reese et al., Campbell, *Biology* 11th ed.). Here you will have an opportunity to purchase the e-book if you choose. You do NOT need to purchase access to the virtual labs.
4. Next, click on “Join course,” choose **BCOR12SPRING2020MAYCOLLADOSECTIONS C and F** enter the following:

**Mastering Biology Course ID:** **MBMAYCOLLADO2699583**

**Student ID**, enter your UVM NetID (i.e. your short form UVM email username; e.g., “jjmitche”)

***Note:*** *Notice that there are follow up assessment for each chapter throughout. These follow ups are there to help you study and are not included in the final grading for this assignment.*

**2. BLACKBOARD ASSIGNMENTS + ICLICKERS**

In order to be an active participant during lecture, it is mandatory that you read the assigned material and respond to the weekly lecture assignment. Keeping up with the assigned readings, as well as actively reading and reflecting on the material, is paramount to your success in this course.

* **Tuesdays homework**: every Tuesday you will answer 2 questions in Blackboard regarding material to be discussed each week.
* **Thursday homework:**Making connections. On selected Thursday days (see below) I will be posting a link to a science news that relates to topics, processes, or concepts discussed in class.
* Write a short summary (~50-100 words) about the sciences news. **DO NOT COPY AND PASTE.** **The University of Vermont has a very strict policy concerning academic honesty and plagiarism (see below).**
* Make connections! Write a short perspective (~100-150 words) about how the science news relates to concepts or processes discussed in class. **Use the vocabulary learned in class.** See Science Blog Calendar below.

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| **Science Blog Due Date** | **Science News** |
| January 23 | Long-term predator–prey cycles finally achieved in the lab <https://www.nature.com/articles/d41586-019-03603-3> |
| February 6 | When sex differences lead to extinction  <https://www.nature.com/articles/d41586-018-04059-7> |
| February 20 | Evolutionary race as predators hunt prey  <https://www.nature.com/articles/d41586-018-01278-w> |
| February 27 | Malaria-carrying mosquitoes get a leg up on insecticides  <https://www.nature.com/articles/d41586-019-03728-5> |
| March 5 | Cities serve as testbeds for evolutionary change  <https://www.pnas.org/content/116/8/2787?cct=1971> |
| March 19 | Fossils, phylogenies, and the challenge of preserving evolutionary history in the face of anthropogenic extinctions. **READ: Significance, Abstract, and Introduction ONLY.**  <https://www.pnas.org/content/112/16/4909>. See attached Science News in BB |
| March 26 | Alien genes from bacteria helped plants conquer the land  <https://www.sciencemag.org/news/2019/11/alien-genes-bacteria-helped-plants-conquer-land> |
| April 2 | Some fungi trade phosphorus with plants like savvy stockbrokers <https://www.sciencenews.org/article/some-fungi-trade-phosphorus-plants-savvy-stockbrokers> |
| April 16 | Insects took off when they evolved wings <https://news.stanford.edu/2018/01/23/insects-took-off-evolved-wings/> |
| April 30 | All ears about ancient mammals  <https://www.nature.com/articles/d41586-019-03605-1> |

* **iClicker (in class activity): ~~Your~~ iClicker questions will be uploaded in BB accompanying each lecture** **and are meant to evaluate your understanding of the material**. ~~remotes will be~~ ~~used for in-class concept tests and peer instruction.~~ **For each question, you will receive 1 point for participating in the iClicker question during class, and 1 additional point for getting the correct answer.**~~If you miss class, you will not be able to make-up for those points.~~ ~~Do not attempt to give your remote to a friend to answer in your absence. This behavior violates the Academic Integrity policy, will not be tolerated and can earn you and your friend an XF fail (i.e., “failure resulting from academic dishonesty”) in this course.~~

**5. LABORATORY:** You will attend your scheduled lab once a week beginning the week of September 10 to complete the weekly activity. There is a separate lab Blackboard site that contains the lab syllabus, weekly lab procedure and lab-related materials and assignments. You must sign into that blackboard page prior to your scheduled lab time, in order to be properly prepared for the first day as well as all subsequent labs. In addition, there is one required text specifically for lab (see page 1). Labs are taught by graduate teaching assistants (TAs). You will meet your graduate teaching assistant (TA) during the first week of labs, and all questions and concerns should be directed to your TA throughout the semester. Be prepared to take a short quiz on the lab material at the beginning of each lab.

**Strategies TO SUCCESSFULLY PASS This Course**

**COME TO CLASS.** We often hear students say they don't come to class because "it's all in the book." This is not true! Instructors draw from their own knowledge and expertise when preparing teaching materials, so we often cover topics and examples that you will not find in the book. You also have no way of knowing what material we emphasized or how, without coming to class. Most students cannot skip class regularly and still do well in this course. This strategy is related to

**ATTENDANCE –** Your participation and attendance are paramount in succeeding in class. I have no specific attendance policy, but it is my hope that you will WANT to attend and participate in order to advance your academic career and obtain a better understanding of the core concepts of Biology. That said, if you miss an assignment, lecture questions, homework, exam, etc. due to no or poor attendance, there are no opportunities to make up a missed assignment except under extenuating circumstances. If extenuating circumstances do occur, please discuss them with me as soon as possible and I will do my best to accommodate you.

**KEEP UP.** There is a lot of material covered in this course, so do not expect to learn it the night before the exam! The structure of the course with weekly lecture assignments and weekly homework assignments help you keep a suitable pace throughout the semester. It is VERY helpful to have read the material before you come to class.

In this section, there are two complimentary sources of information; Blackboard posted lecture notes and figures as well as the Campbell Text.

**TAKE ADVANTAGE OF HELP.** If you are having difficulty, or simply need clarification of some of the material, see either your Instructor directly or your laboratory Teaching Fellow. We all hold office hours and intend for that time to be used helping students. But if you don't seek us out, there's no way for us to know that you're struggling. And remember... Academic honesty is expected of all students. If you are caught cheating on an exam, you will receive a zero for that exam. That score cannot be the one you drop. All laboratory reports MUST be written individually unless specifically assigned as a group report. Free tutoring is also available. Look into the following opportunities:

* The **Tutoring Center @ the Learning CO-OP** (http://www.uvm.edu/~leanco) offers a variety of academic support including study skills, time management, and test-taking tips.
* Our **Supplemental Instructor (SI)** is Brittany Belanger. Brittany is a junior neuroscience major and will have office hours and group tutoring sessions at the Learning Coop. Email Brittany at [Brittany.Belanger@uvm.edu](mailto:Brittany.Belanger@uvm.edu) and take note of review session announcements in class and on Blackboard.
* [**Student Accessibility Services Office**](https://www.uvm.edu/academicsuccess/student_accessibility_services)provides services to students with documented disabilities. SAS offers programs for eligible students including exam accommodations, meetings with Accessibility Specialists for disability-related matters, e-books, deaf and hard of hearing services, notetaking and adaptive technology.

**ACADEMIC HONESTY**

Academic honesty is expected of all students. The University of Vermont has a very strict policy concerning academic honesty and plagiarism. Please see the statement on academic honesty http://www.uvm.edu/~uvmppg/ppg/student/acadintegrity.pdf. **Plagiarism constitutes a violation of Academic Honesty and warrants failure on an assignment and/or failure in the course.** Plagiarism of ANY sort - e.g., copying part or all of a fellow student's report, copying from original references, texts, or websites - will NOT be tolerated. The consequences of plagiarism or cheating range from a score of zero on the assignment or exam, to filing a complaint with the University’s Coordinator for Academic Honesty which can result in expulsion from UVM.

**Course content is the property of the instructor**

Consistent with the University’s policy on intellectual property rights, all teaching and curricular materials (including but not limited to classroom lectures, class notes, exams, handouts, and presentations) are the property of the instructor. Therefore, electronic recording and/or transmission of classes or class notes is prohibited without the express written permission of the instructor. Such permission is to be considered unique to the needs of an individual student (e.g. ADA compliance), and not a license for permanent retention or electronic dissemination to others. For more information, please see the UVM policy on Intellectual Property, sections 2.1.3 and 2.4.1

**CLASSROOM RESPECT**

It is important to maintain a respectful environment in class, and we expect this from all of you as you should expect this from us. You are here to learn, and we are here to help you learn with mutual respect. Please **arrive on time** and **do not leave early** without permission. When you come to lecture and lab, please **turn off your cell phone**. We will not tolerate phone conversations or texting during lecture or lab. However, you should feel free to use a laptop to take notes, but refrain from email, social media sites, shopping, games, videos, etc. It is distracting to those around you if you are using your computer to do anything but take notes. If we see you using your computer for anything but note taking, we will rescind your privilege of using electronics during class. In general, you should come prepared to dedicate your full attention to your instructor and TA during lecture and lab.

**EMAIL ETIQUETTE:** Your Instructors and Teaching Fellows will make every effort to answer your emails promptly. Please return the courtesy by responding. Also, please address your queries respectfully. “Hey” does not fall in this category, and any such messages risk being ignored (perhaps the best litmus test is to ask the following: “if you were looking for a job, would you greet your prospective new employer in that manner?”). **Also, it is important to properly identify yourself and the particular course you are inquiring about.** Instructors often have multiple “Biology” courses and multiple students with the same first name.

**RELIGIOUS HOLIDAYS:** Students should submit in writing to their instructors **by the end of the second full week of classes** their documented religious holiday schedule for the semester. Students who miss work for the purpose of religious observance will be allowed to make up this work.

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| **Date** | **Day** | **Topics/Activities** | **Chapter** | **Lab** |
| 13-Jan | M | Introduction |  | Plant-Fungal Symbiosis I |
| 15-Jan | W | Ecology and the Biosphere | **ch 52** |  |
| 17-Jan | F | Population Ecology | **ch 53** |  |
| 20-Jan | M | MLK (no class) |  | NO LABS THIS WEEK |
| 22-Jan | W | Population Ecology |  |  |
| 24-Jan | F | Community Ecology | **ch 54** |  |
| 27-Jan | M | Community Ecology 2 |  | Bean Beetle Microbes I |
| 29-Jan | W | Ecosystems and Restoration Ecology | **ch 55** |  |
| 31-Jan | F | Ecosystems and Restoration Ecology 2 |  |  |
| 3-Feb | M | Meiosis and Sexual Life Cycles | **ch 13** | Bean Beetle Microbes II |
| 5-Feb | W | Mendelian Genetics | **ch 14** |  |
| 7-Feb | F | **Exam I (ch 52,53,54,55,13)** |  |  |
| 10-Feb | M | Mendelian Genetics |  | Ant Inheritance I |
| 12-Feb | W | The Chromosomal Basis of Inheritance | **ch 15** |  |
| 14-Feb | F | The Chromosomal Basis of Inheritance |  |  |
| 17-Feb | M | Presidents Day (no class) |  | NO LABS THIS WEEK |
| 19-Feb | W | Evolution by Natural Selection | **ch 22** |  |
| 21-Feb | F | Evolution of Populations | **ch 23** |  |
| 24-Feb | M | Evolution of Populations 2 |  | Ant Inheritance II |
| 26-Feb | W | Evolution of Populations 3 |  |  |
| 28-Feb | F | Origin of Species | **ch 24** |  |
| 2-Mar | M | Origin of Species 2 |  | NO LABS THIS WEEK |
| 4-Mar | W | Phylogenetics | **ch 26** |  |
| 6-Mar | F | Phylogenetics |  |  |
| 9-14Mar | M | spring Break |  | NO LABS THIS WEEK |
| 16-Mar | M | Origin of Life | **ch 25** | Mammal Phylogeny |
| 18-Mar | W | review |  |  |
| 20-Mar | F | **Exam II (14,15,22,23,24,26)** |  |  |
| 23-Mar | M | Bacteria and Archaea | **ch 27** | Bean Beetle Microbes III |
| 25-Mar | W | Eukaryotes | **ch 28** |  |
| 27-Mar | F | Seedless Plants & Transition to Land | **ch 29** |  |
| 30-Mar | M | Seedless Vascular Plants: Ferns etc. |  | Plant-Fungal Symbiosis II |
| 1-Apr | W | Seed Plants: Gymnosperms | **ch 30** |  |
| 3-Apr | F | Seed Plants: Angiosperms |  |  |
| 6-Apr | M | Fungi | **ch 31** | Plant-Fungal Symbiosis III |
| 8-Apr | W | Fungi 2 |  |  |
| 10-Apr | F | Animal Origins and Diversity | **ch 32** |  |
| 13-Apr | M | **Exam III (25,27,28,29,30,31)** |  | Insect Diversity |
| 15-Apr | W | Invertebrates | **ch 33** |  |
| 17-Apr | F | Invertebrates 2 |  |  |
| 20-Apr | M | Invertebrates 3 |  | Bird Behavior I |
| 22-Apr | W | Vertebrates 1 | **ch 34** |  |
| 24-Apr | F | Vertebrates 2 |  |  |
| 27-Apr | M | Vertebrates 3 |  | Bird Behavior II |
| 29-Apr | W | Conservation Biology and Global Change | **ch 56** |  |
| 1-May | F | Conservation Biology and Global Change 2 |  |  |
| **Section C** |  | **Cumulative Final Exam: May 7 @ 10:30-1:15 p.m.** |  |  |
| **Section F** |  | **Cumulative Final Exam: May 4 @ 4:30-7:15 p.m.** |  |  |