BSC 1005: Introductory Biology for Non-majors
University of South Florida Sarasota – Manatee
Instructor – Dr. Erinn Muller
Spring 2015

“The beginning of knowledge is the discovery of something we do no understand.”
-- Frank Herbert, author of Dune

COURSE TIMES AND LOCATION: Tuesdays and Thursdays 9:30 – 11:00 AM, USFSM Classroom B336
OFFICE: Stein 618 (Mote Marine Laboratory)
CAMPUS PHONE: 941-388-4441 x310
E-MAIL: emuller@mote.org
OFFICE HOURS: My office hours will be held in my office at Mote Marine Lab on Tuesdays from 12 – 2 PM. I also maintain an open door policy to meet with students. If you are at Mote, please feel free to stop by my office anytime. If I am there, I will be happy to meet with you. I will respond to questions sent via CANVAS or by email within 24 hours on weekdays and within 48 hours on weekends.
PREREQUISITES: none
COURSE DESCRIPTION: A comprehensive introduction to living systems, including the scientific basis of biology, cell structure and function, genetic mechanisms, and ecological and evolutionary processes. This course fulfills one of the natural sciences requirements for the general education curriculum at USFSM.
COURSE TOPICS
This course will cover the following content areas:
1. The scientific method and evaluation of scientific data
2. The structure and function of biological macromolecules
3. The structure and function of cells
4. Cellular metabolism
5. Global warming
6. DNA synthesis
7. Cell division and Cancer
8. Mendelian Genetics
9. Biotechnology
10. Evolution and Biodiversity
11. Population Biology
12. Ecology and Conservation Biology

COURSE PURPOSE/OBJECTIVES: Welcome to Biology 1005! Biology is an exciting and ever-changing field. Both amateurs and professionals frequently make new discoveries that contribute to our understanding
of living organisms and the biological processes occurring on earth. In this course, we will investigate the cellular structure of living organisms, the molecular basis of inheritance, mechanisms of evolution, the diversity of living organisms on earth, discuss how these organisms adapt to their environments, and explore how ecosystems function. Most importantly, I want you to learn life long skills that will help you in your pursuit of happiness, aka. LIFE. These skills include critical thinking, interpersonal relationships, an understanding of how living organisms function, an appreciation for biodiversity, and knowledge of the dynamics of ecosystems. I promise to present biology in an exploratory context, and hope that you will become as excited about biology as I am.

**TEXTBOOK AND COURSE MATERIALS**
The required textbook for this course is: Belk and Maier 2013. *Biology. Science for Life.* Pearson Education Inc. ISBN: 9780321767592. This text is available in both paperback and ebook formats. Either one is fine for this course. **If you purchase the book new it will already come with an access code for Mastering Biology. You need this code to complete assignments in this course. If you purchase the book used you can purchase an access code either through the bookstore or through the publishers website:** [http://www.mypearsonstore.com/index.asp](http://www.mypearsonstore.com/index.asp). **You are expected to read all parts of the assigned readings.**

**STUDENT LEARNING OUTCOMES**
After completion of this course, students should be able to:

- Be familiar with the basic concepts of the scientific process and the nature of Biology.
- Understand the chemistry of life including: the basic structure of atoms and molecules, the properties of water, and the major groups of organic compounds and their functions in living systems.
- Discuss the fundamental structure and function of cells including: the role of sub-cellular organelles, how animal & plant cells differ, and the methods of cellular transport.
- Describe the nature of metabolism, including photosynthesis and cellular respiration, and it’s importance to living organisms.
- Understand the process of cellular and organismal proliferation including: mitosis & meiosis, DNA structure and function, and the basic principles of genetics and Mendelian inheritance.
- Appreciate the nature of the evolutionary theory and explain the basic concepts of evolution and natural selection according to Darwin.
- Understand and discuss the relationships between organisms and their environment including ecosystems, biomes, and their sustainability.

**USFSM General Education Student Learning Outcomes**

1. Students will demonstrate the ability to critically examine and evaluate scientific observation, hypothesis, or model construction, and the use of scientific method to explain the natural world. *(General Education Florida, Statewide Natural Sciences Outcome #1)*

2. Students will successfully recognize and comprehend fundamental concepts, principles, and processes about the natural world. *(General Education Florida, Statewide Natural Sciences Outcome #2)*

3. **Ethics:** Students will apply ethical perspectives and concepts to situations and justify the implications of their applications. *(USFSM Pillars of Intellectual Engagement)*

**COURSE COMPONENTS AND ACTIVITES**
**CANVAS Use**: BSC1005 uses the CANVAS Course Management system to administer quizzes, for submission of student work, course communications, to distribute course information, and for grading. To log in to CANVAS please use the following link along with your USF net ID and password: [https://usflearn.instructure.com](https://usflearn.instructure.com).

I use the following course components in BSC 1005....

1. **Reading Assignments and Reading Guides.** Readings provide an introduction to the subjects we cover in this course. I will provide you with reading guides in the form of PowerPoint presentations that highlight information you should know from each chapter and ask questions you can use to evaluate your understanding of the topics covered. You do not need to submit your answers to questions in the reading guides, however answering these questions will likely improve you performance on the graded components of this course. The PowerPoint presentations often include videos and animation links that I expect you to watch online.

   You are expected to read all of the assigned readings for this course including the entire chapters of the textbook that correspond with topics we cover each week.

   **Please make sure that you read each chapter and review the reading guides before coming to class each week.**

2. **Homework and Mastering Biology Assignments.** I use MasteringBiology, an online program as the major homework component in this course. These assignments will allow you to evaluate your understanding of the subject material and practice answering the types of questions that may show up on the weekly quizzes. These assignments also help you to relate what we are learning in class to real world scenarios. **Mastering Biology Homework Assignments are due by Friday at 11:59 pm each week.** Please complete the MasteringBiology assignments before attempting each quiz. Late assignments receive a 10% point deduction per day that they are late. This includes weekends.
   - If you bought a new book at the bookstore, it came with an access code to MasteringBiology.
   - If you wish to buy access to MasteringBiology separately, you may purchase access with a credit card at [http://www.masteringbio.com](http://www.masteringbio.com).

   Please visit [http://www.masteringbio.com](http://www.masteringbio.com) to register and get started. The Course ID for this class is MBMULLER73159. You will need to complete your first MasteringBiology assignment on the first day of class. This assignment will introduce you to the program so that you are familiar with the options before completing assignments based on course materials.

   Additional homework assignments and discussion posts are also a component of this part of the class. I will post guidelines for homework to be completed outside of MasteringBiology on CANVAS and discuss these in class. Please see the section below for guidelines on the discussion component of this course.

3. **Weekly Quizzes.** Research demonstrates that students learn best when they are asked to apply their knowledge and are frequently tested on new information. For this reason, we will have weekly quizzes on the material we cover. These quizzes replace the typical larger less frequent exams you may be used to from other courses. Please keep in mind that all of the information in this course builds upon your understanding of the material previously presented in the course. Therefore, quizzes will focus on a particular chapter, however you will need to relate the topics covered in that chapter to information in other chapters and draw connections between all information presented in this course.

   Quizzes must be completed online by last day of each week (Sunday) in CANVAS. Quizzes not completed in CANVAS by 11:59 pm EST on Sundays will be counted as a zero. Quizzes completed after the deadline or not completed at all will receive a zero.

4. **Projects.** During the course of this semester I will assign both group and individual projects based on our required course meetings. These projects are designed to help you gain a deeper understanding of the topics we cover. In addition, the projects will help you to develop skills necessary to succeed in both this course and
your future careers. These skills include interpersonal working relationships, critical thinking, communication skills, and the ability to analyze and interpret data. Handouts providing detailed information on project requirements and due dates will be provided in class and on the CANVAS course website. Any projects turned in late will receive a 10% point deduction per day that they are late.

5. Participation in Course Activities and Discussions. We will use class time to conduct activities and discussions to allow you to apply what you are learning about biology to real life scenarios. You must be present in order to receive credit for any activities or discussions that take place during class. If you miss a class you forfeit all points for activities and discussions we do during that class period.

Some discussions will require that you post your answers in CANVAS before coming to class. This will be announced in class and must be done by 11:59 pm the night before we hold the discussion in class. Late discussion posts receive no credit. You will not be able to see the posts of other students until you have completed your initial discussion post.

In order to answer most discussion questions thoughtfully you will need to read or watch material associated with the question before posting your comments. Please note that discussion posts that are not well explained or thoughtful (such as “no”, “I agree”, “I have no opinion about this subject”, ect.) will not count for credit. It is fine for you to disagree with the comments that I make or those made by other students. However, when reading or responding to posts on CANVAS or during discussions in class please do so in a respectful manner.

WORKLOAD
In general a student should spend 2-3 hours of study time per unit of a college class. Although the amount of time spent studying will vary from student to student, in order to succeed in this course you should expect to spend 8 – 12 hours/week on course materials. Please set aside time each day to review notes, do readings, complete assignments/assessments, participate in discussions, and to meet with study groups or your professor.

GRADING, EVALUATION AND ATTENDANCE POLICIES:

Your grade will be based on the following course components:

1. Weekly Chapter Quizzes – 35%
2. MasteringBiology Homework Assignments – 25%
3. Group and Individual Projects – 20%
4. Participation in Course Activities and Discussions – 20%

The grading scale will be:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
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<tbody>
<tr>
<td>94-100%</td>
<td>A</td>
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<tr>
<td>90-93%</td>
<td>A-</td>
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<td>87-89%</td>
<td>B+</td>
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<td>84-86%</td>
<td>B</td>
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<td>80-83%</td>
<td>B-</td>
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<td>77-79%</td>
<td>C+</td>
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<td>74-76%</td>
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<tr>
<td>70-73%</td>
<td>C-</td>
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<tr>
<td>67-69%</td>
<td>D+</td>
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<tr>
<td>64-66%</td>
<td>D</td>
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<tr>
<td>60-63%</td>
<td>D-</td>
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Exceptional Very Good Average Below Average Failing

Disputing a Grade

Every student has two weeks after receiving a graded assignment to dispute the actual grade. I cannot discuss specific or detailed grading issues over email or by phone due to FERPA regulations, which are in place to protect your privacy. If you need to discuss a grade on an assignment please make an appointment to meet me on campus. Prepare an explanation for why you believe there is an error before coming to meet with me. Also, make sure to bring the graded assignment with you to the meeting.

Attendance
Students are required to attend all class meetings. A student who misses a class will forfeit all points for activities conducted during that course period. Students may only make up work in the case of emergencies. If you have an emergency, please contact your instructor by phone immediately to explain the circumstance that requires you to be absent (i.e., illness, family emergency, etc.). In order to obtain an excused absence, you must provide official documentation of why you were absent.

ADDITIONAL COURSE INFORMATION

I do not believe in “stupid” questions. There is a good chance that if you are wondering about something in this course, other students are too. Please post your questions regarding course material or assignments to CANVAS. This way the entire class can benefit from our discussions.

PLEASE TREAT ALL MEMBERS OF THIS COURSE WITH RESPECT. Course communications should not include profanities, disrespectful comments, or other offensive language. When we debate certain subjects, you may find that you disagree with the opinions of others. This is normal, and while you may not agree with someone on certain subjects, I expect you to always be respectful of opinions shared in this course.

LET ME KNOW IF YOU ARE HAVING DIFFICULTY IN THIS COURSE. I am here to help you and want you to succeed in this course. Please call, stop by, or email me if you encounter any issues that may inhibit your performance in this course.

CHECK YOUR USF EMAIL ACCOUNT DAILY FOR COURSE UPDATES AND INFORMATION.

How to login to your USF email:
1. Login to MyUSF: https://my.usf.edu
2. Select “email” from the tabs at the top of the screen
3. Select "students –USF google mail“ from the drop-down menu.

COMPUTER LAPTOP USE
USFSM requires all students to have laptops that can be brought with them to class. I will let you know when you need to bring your laptop to class so that you can complete certain activities.

PLAGIARISM SOFTWARE
Instructors are encouraged to use the “TURNITIN” application via CANVAS whenever possible to assist students in avoiding plagiarism. If used instructors must include the following statement in the course syllabus:

The University of South Florida has an account with an automated plagiarism detection service which allows student assignments be checked for plagiarism. I reserve the right to ask students to submit their assignments to Turnitin through CANVAS. Assignments are compared automatically with a database of journal articles, web articles, and previously submitted papers. The instructor receives a report showing exactly how a student’s paper was plagiarized.

Pursuant to the provisions of the Family Educational Rights and Privacy Act (FERPA), students are requested to maintain confidentiality as a way to keep their personal contact information (i.e. name, address, telephone number) from being disclosed to vendors or other outside agencies. By your submission, you are also agreeing to release your original work for review for academic purposes to Turnitin.

Need help?
CANVAS Support is available through USFSM E-Learning staff from 9am to 5pm Monday through Friday. Please call or email Stephanie Fuhr at 941-359-4295 (or sfuhr@sar.usf.edu) or Dale Drees at 941-359-4215 djdrees@sar.usf.edu.

The USF Tampa IT Helpdesk provides 24 hour support for CANVAS. Please call 813-974-1222 or email: help@usf.edu if you need assistance outside of USFSM’s E-Learning hours.
Additionally, CANVAS tutorials can be found in the Student Quickstart Guide at http://guides.instructure.com/m/8470.

USFSM AND USF SYSTEM POLICIES

A. **Academic Dishonesty**: The University considers any form of plagiarism or cheating on exams, projects, or papers to be unacceptable behavior. Please be sure to review the university’s policy in the catalog, USFSM Undergraduate Catalog or USFSM Graduate Catalog, the USF System Academic Integrity of Students, and the USF System Student Code of Conduct.

B. **Academic Disruption**: The University does not tolerate behavior that disrupts the learning process. The policy for addressing academic disruption is included with Academic Dishonesty in the catalog: USFSM Undergraduate Catalog or USFSM Graduate Catalog, USF System Academic Integrity of Students, and the USF System Student Code of Conduct.

C. **Contingency Plans**: In the event of an emergency, it may be necessary for USFSM to suspend normal operations. During this time, USFSM may opt to continue delivery of instruction through methods that include but are not limited to: CANVAS, Elluminate, Skype, and email messaging and/or an alternate schedule. It’s the responsibility of the student to monitor CANVAS site for each class for course specific communication, and the main USFSM and College websites, emails, and MoBull messages for important general information. The USF hotline at 1 (800) 992-4231 is updated with pre-recorded information during an emergency. See the Safety Preparedness Website for further information.

D. **Disabilities Accommodation**: Students are responsible for registering with the Office of Students with Disabilities Services (SDS) in order to receive academic accommodations. Reasonable notice must be given to the SDS office (typically 5 working days) for accommodations to be arranged. It is the responsibility of the student to provide each instructor with a Memo of Accommodation. Disability Coordinator, 941-359-4714, disabilityservices@sar.usf.edu, http://www.usfsm.edu/students/disability/

E. **Fire Alarm Instructions**: At the beginning of each semester please note the emergency exit maps posted in each classroom. These signs are marked with the primary evacuation route (red) and secondary evacuation route (orange) in case the building needs to be evacuated. See Emergency Evacuation Procedures.

F. **Religious Observances**: USFSM recognizes the right of students and faculty to observe major religious holidays. Students who anticipate the necessity of being absent from class for a major religious observance must provide notice of the date(s) to the instructor, in writing, by the second week of classes.

G. **Web Portal Information**: Every newly enrolled USF student receives an official USF e-mail account. Students receive official USF correspondence and CANVAS course information via that address.

H. **Instructor Copyright**: Students may not sell notes or other course materials.
COURSE SCHEDULE
Please read the assigned chapters and review the reading guides before coming to class each week. The schedule below is based on a Monday-Sunday week. **Mastering Biology Homework Assignments are due on Fridays** at 11:59 pm EST each week. **Quizzes are due on Sundays** by 11:59 pm EST at the end of the given week. Additional assignments and due dates will be announced in class and available in CANVAS.

<table>
<thead>
<tr>
<th>Date (Week of)</th>
<th>Topic</th>
<th>Assigned Reading</th>
<th>Assignments, Assessments, &amp; Activities</th>
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<tbody>
<tr>
<td><strong>Unit 1: Chemistry and Cells</strong></td>
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<tr>
<td>Week 1: 1/5</td>
<td>Welcome</td>
<td>Syllabus CH 1</td>
<td>1/9: Last day to Drop or Add a course without record.</td>
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<td></td>
<td>What makes science unique? Statistics - Evaluating Scientific Data</td>
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<td>- Introduction to MasteringBiology Assignment (due 1/12)</td>
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<td>Are we alone in the universe? The building blocks of life. Cells</td>
<td>CH 2</td>
<td>- Mastering Biology CH2</td>
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<td>Is it Possible to Supplement Your Way to Better Health? Nutrients and Membrane Transport</td>
<td>CH 3</td>
<td>- Mastering Biology CH3</td>
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<td>Fat: How Much is Right for You? Enzymes, Metabolism, and Cellular Respiration</td>
<td>CH 4</td>
<td>- Mastering Biology CH4</td>
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<td>Life in the Greenhouse Photosynthesis and Global Warming</td>
<td>CH 5</td>
<td>- Mastering Biology CH5</td>
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<td><strong>Unit 2: Genetics</strong></td>
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<td>Week 6: 2/9</td>
<td>Cancer DNA synthesis, mitosis, and meiosis</td>
<td>CH 6</td>
<td>- Mastering Biology CH6</td>
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<td>Are You Only as Smart as Your Genes? Mendelian and quantitative genetics</td>
<td>CH 7</td>
<td>- Mastering Biology CH7</td>
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<td>DNA Detective - Complex Patterns of Inheritance and DNA Fingerprinting, Genetically Modified Organisms - Gene Expression, Mutation, and Cloning</td>
<td>CH 8 CH 9</td>
<td>- Mastering Biology CH8/CH9</td>
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<tr>
<td><strong>Unit 3: Evolution and Biodiversity</strong></td>
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<td>Week 9: 3/2</td>
<td>SPRING BREAK</td>
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### Week 10: 3/9
Where Did We Come From? The Evidence for Evolution
An Evolving Enemy - Natural Selection

- CH 10
- CH 11
- Mastering Biology CH10
- CANVAS Quiz CH10
- Mastering Biology CH11
- Quiz CH11

### Week 11: 3/16
Who am I? Species and Races

- CH 12
- 3/21: Last day to drop with a ‘W’; no refund; no academic penalty
  - Mastering Biology CH12
  - Quiz CH12

### Week 12: 3/23
Prospecting for Biological Gold - Biodiversity and Classification

- CH 13
- Mastering Biology CH13, part 1
  - Quiz CH13, part 1

### Week 13: 3/30
Biodiversity and Classification (cont.)

- CH 13
- Mastering Biology CH13, part 2
  - Quiz CH13, part 2

### Unit 4: Ecology

#### Week 14: 4/6
Is the Human Population Too Large? Population Ecology

- CH 14
- Mastering Biology CH14
  - Quiz CH14

#### Week 15: 4/13
Population Ecology

- CH 14

#### Week 16: 4/20
Conserving Biodiversity - Community and Ecosystem Ecology

- CH 15
- Mastering Biology CH15
  - Quiz CH15

#### Week 17: 4/27-5/1
Finals Week: Optional face-to-face meetings

- Final Course Reflection Due 5/1

*No course assignments will be accepted after 5/1/2015 at 11:59 PM EST.*