

SYLLABUS - Biology 111 – Introduction to Cell and Molecular Biology
Spring 2016
Harbor Walk West 211 9:55-11am TR

Instructor: Dr. Erik Sotka

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Office hours: 11-12 Tuesdays HWWE 309

Communication: The best way to get a hold of me is through my email. I will respond to you within 24 hours during the weekdays, and on or before Monday if you email after 5pm Friday. ***If you are confused about what you should be doing***, start with OAKS (enter <http://my.cofc.edu> and click on the link to OAKS).

Course objectives: This is a foundation course for science majors emphasizing the concept of structure and function of biological systems at the molecular and cellular levels. Topics include biochemistry, biochemical and molecular evolution, cell function, respiration, photosynthesis, genetics, and molecular biology. Biology 111 LAB is a co-requisite.

My expectations: My goal is to facilitate your discovery of the fantastic world of biology, teach some basic principles that will help with future biological courses, and prepare you for the power and peril of emerging biological technologies.

Required materials: *Biological Science* 5th edition by Scott Freeman (Hardcover or eText versions).

Course Organization

The course material has been divided into six modules, and with six midterm exams (each of which take 35-40 minutes). Everything is organized through OAKS (enter <http://my.cofc.edu> and click on the link to OAKS). If you have a question about the course (“Where can I find the syllabus?” “When is the test?”, etc...), you will find it at OAKS. GO THERE FIRST.

Exams are multiple choice and short answer. The course content generally follows the text closely, and nearly all exam questions stem from material we covered in class. These exams are tough, because the material is detailed and dense and I tend to ask questions that force you to apply knowledge you have gained. I STRONGLY urge that you 1) read the text before class, 2) take copious, detailed lecture notes and 3) re-write your notes 1-2 days later.

By the Honor Code, you agree to not use notes, books or online resources during the test. At the end of the course, there will also be a final exam that is cumulative.

Point Distribution:

Midterm exam (100 pts X 6)	600
Final exam	200
	Total 800

Tentative Grading Scale:

93-100 A	80-82 B-	67-69 D+
90-92 A-	77-79 C+	63-66 D
87-89 B+	73-76 C	60-62 D-
83-86 B	70-72 C-	<60 F

This is the guaranteed scale. If you earn a particular percentage of the total points you are guaranteed the grade indicated by the scale. At the end of the term, I have the option of lowering this scale, if I feel it is justified. **Do not count on this.** Always assume that the grade you earn based on this scale is the grade you will receive. All student discipline will be governed by the contents of the Honor Code¹.

Extra Credit

We will offer potential extra credit options all of minor point value. A maximum of 21 points may be awarded. NOTE: These extra credits are a token to encourage general campus/civic involvement. *Your time is better spent studying for an exam than doing extra credit!!*

We will announce in lecture the seminars with content appropriately associated with Biology – but times generally include:

Option 1) Biology Department Seminars: Dates and times will be announced in class

Option 2) Ft. Johnson Marine Seminars: Friday 4-5 pm seminars at Ft. Johnson MMRI Auditorium (next to CofC Grice Marine Lab) <http://gricemarinelab.cofc.edu/research/marine-science-seminar/index.php>

Directions to the CofC Marine lab

<http://gricemarinelab.cofc.edu/about-the-laboratory/directions/index.php>

Option 3) Study skills seminars. Check the website updates <http://csl.cofc.edu/study-skills/workshop-schedule/index.php>

To receive credit for options 1-3 you must hand in a typed one page summary of the seminar that you participated in which also includes a description of what you learned from this seminar in the dropbox folder in Oaks. We encourage you to be involved in these seminars to get jazzed up by the enthusiasm of other professional biologists, even after you have exhausted your extra credit options. Three points of extra credit for each seminar write up.

Option 4) Fill a gallon size Ziplock (or other brand or equivalent volume in a recycled bag) full of trash from below the high tide line at Folly Beach – and a typed paragraph on the human impact of this trash on the Folly Beach biological environment. Three points of extra credit.

¹ <http://studentaffairs.cofc.edu/honor-system/studenthandbook/>

General schedule (subject to change)

Module 1: The molecules of life	
7-Jan	Introduction [1].
12-Jan	Chemical bonds, thermodynamics, water [2]
14-Jan	Proteins [3]
19-Jan	Nucleic acids [4]
21-Jan	Carbohydrates [5]
26-Jan	Midterm 1
Module 2: Cell structure and function, part 1	
28-Jan	Lipids and membranes [6]
2-Feb	Passive and active transport [6]
4-Feb	Cell structure and function [7-8]
9-Feb	Cell structure and function [7-8]
11-Feb	Midterm 2
Module 3: Cell structure and function, part 2	
16-Feb	Respiration [9]
18-Feb	Respiration [9]
23-Feb	Photosynthesis [10]
25-Feb	Photosynthesis [10]
1-Mar	Midterm 2
Module 4: Cell structure and function, part 3	
3-Mar	Cell-cell interactions [11]
8-Mar	Spring break
10-Mar	Spring break
15-Mar	Mitosis [11]
17-Mar	Meiosis [12]
22-Mar	Midterm 4
Module 5: Gene structure and expression, part 1	
24-Mar	Mendel and the gene[14]
29-Mar	Mendel and the gene[14]
31-Mar	DNA synthesis and repair [15]
5-Apr	How genes work [16]
7-Apr	Midterm 5
Module 6: Gene structure and expression, part 2	
12-Apr	Transcription [17]
14-Apr	Gene expression - prokaryotes [18]
19-Apr	Gene expression - eukaryotes [18]
21-Apr	Midterm 6
26-Apr	10AM - Final Exam