

COURSE NAME: Introductory Biology

Spring 2010

COURSE NUMBER: BIOL 140-01

INSTRUCTOR: Prof. Melanie Trecek-King

OFFICE: S110

OFFICE HOURS: Monday/Tuesday 2-3; Wednesday 4-5; Thursday 10-11; Or by appointment

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MEETING TIME: Tuesday and Thursday, 11-12:15, S538

COURSE DESCRIPTION: This course is not intended for students planning to major in science or allied health. It is an issues based course including topics of current interest in today's society. It will include aspects of human biology, biotechnology, ecology, and other topics. This course is intended to further develop student abilities in the core competencies: critical thinking, oral communication, quantitative skills, reading, technology skills, and writing.
Lecture: 3 hours.

PREREQUISITE: Preparing for College Reading II (ENGL092), Introductory Writing (ENGL099), and Fundamentals of Mathematics (MATH010) or waiver by placement testing results or Departmental Approval

REQUIRED TEXTS: Belk, C. and Borden Maier, V. 2010. *Biology: Science for Life. Third Edition.* Pearson Benjamin Cummings.
ISBN: 0-321-55959-2

COURSE OBJECTIVES: This is an introductory course in biology for non-majors. It will be taught using an issues-oriented approach and will include topics of current interest to today's society, such as environmental science and biotechnology. This course is designed to encourage critical thinking and questioning, to increase your biological literacy, and to teach you tools that will enable you to evaluate scientific arguments and make appropriate decisions affecting your life and society.

WHY BIOLOGY?: *You* are biology! Biology includes living things and everything with which we interact. Biology is in the news daily; the use of stem cells in treating diseases, the use of DNA to solve crimes, global warming resulting in changes in our climate, fisheries declining due to overharvesting, cancer research, the loss of biodiversity, etc., etc., etc..... While we don't have time in this class to cover everything, we hopefully will answer some of your questions, plus help you read the daily newspaper and even better prepare you to vote in elections. And hopefully we will peak your curiosity to continue learning about yourself and the world around you after this class is over!

CLASS FORMAT: We will use a lecture/discussion approach. You are encouraged to contribute relevant information whenever appropriate and upon recognition by the instructor. However, private comments and conversations are not allowed. Tape recording is permitted and encouraged. Good note taking is very important. Questions about the material are encouraged at any time during or after class. As lab is not a required part of this class,

and labs are essential to learning a science like biology, in-class activities will occur on a regular, yet not scheduled, basis. You must be present to participate and earn credit. *To succeed in this class, you should attend each lecture.* Additional out-of-class assignments will be given to supplement your learning. As late work is not accepted, you must *pay attention and adhere to due dates given in class.*

There are specific factual and conceptual course objectives for each topic. You are expected to complete the assigned pages in the text *prior to coming to class.* This preparation will allow you to become a more active participant in the learning process.

COURSE

By the time the student has finished Introductory Biology, he or she should be able to:

OUTCOMES:

1. Describe the general steps of the scientific method and use these steps in solving problems, in order to understand how scientists think, distinguish between pseudoscience and real science, and evaluate scientific information in the popular press.
2. Demonstrate knowledge of the basic chemicals that are important to life in order to understand their role in environmental issues and sustainability and biotechnology.
3. Distinguish between eukaryotic and prokaryotic cells, and identify and describe the structure and function of their components in order to understand the role of cell structure in inheritance, biotechnology, and biodiversity.
4. Describe the structure and replication of DNA and its role in protein synthesis in order to understand the chemical basis of genetics and the use of DNA in genetic engineering, biotechnology, and forensics.
5. Explain why evolution is the central theme in biology and describe the evidence biologists use to support evolution in order to understand the unity and diversity of life.
6. Describe the characteristics of the major phylogenetic groups of life in order to comprehend and appreciate biodiversity.
7. Describe adaptation as a process, interactions in communities, and ecological cycles in order to understand the impact of human activity on communities, ecosystems, and biodiversity.
8. Use the vocabulary associated with the study of biology correctly in order to be able to read and understand the literature and communicate effectively both in writing and orally in a professional setting.
9. Strengthen his or her Core Competencies in order to increase success in this and other courses and in the workplace.

ATTENDANCE POLICY:

You are expected to attend all meetings of the course each week. An outgoing spirit of active participation is your best assurance of success. If extenuating circumstances force you to miss a class, please inform me in advance (if possible) or upon your return to class. You are responsible for making up any material missed.

You are expected to be present in the classroom at the **BEGINNING** of the class period. **LATE ARRIVALS** disturb the class and will **NOT** be tolerated.

GRADING:

Your final grade will be determined by a series of announced quizzes, activities and assignments, one-hour lecture exams, two projects, and a final exam according to the following point system:

Chapter Quizzes (lowest dropped)	15%
Activities/Assignments (lowest dropped)	15%
Lecture Exams	35%
Final Exam (cumulative)	35%

Final grades will be determined as follows:

%	Grade
100-93	A
92-90	A-
89-87	B+
86-83	B
82-80	B-
79-77	C+
76-73	C
72-70	C-
69-67	D+
66-60	D
≤59	F

Chapter Quizzes will be given for most chapters and will consist of a short series of questions worth 10 points. Pay attention in lecture for quiz dates. Quizzes will be administered during first ten minutes of class. **DO NOT ARRIVE LATE!!** There will be **NO** make up of chapter quizzes, so a missed quiz will be assigned a zero grade. The lowest lecture quiz grade will be dropped.

Activities/Assignments are assigned to coincide with lecture material, and may consist of in-class activities, handouts, homework, and major projects. Pay attention in class for handouts and due dates. You are responsible for an assignment, as well as knowing the due date, even if you were not in attendance in class. If you are not present the day an assignment is due you will be able to turn it in the next time I see you. Late assignments will not be accepted and will receive a grade of a zero. The lowest Activity/Assignment grade will be dropped

Exams are based on the lecture notes and any additional materials that are handed out for each unit. There will be a total of two lecture exams throughout the semester. Exams may consist of a mixture of multiple choice, true/false, figures, fill-in-the-blank, matching, short answer, labeling diagrams, and essay questions. *You will not be allowed to make up an exam during the semester, so a missed exam will be assigned a zero grade.*

The *Final Exam* will be a comprehensive exam on the major concepts discussed throughout the semester, with special focus on the chapters covered since the previous exam. A missed final exam will not be made up or an Incomplete grade given except under extraordinary circumstances and by prior arrangement, when the proper documentation is provided. The final exam date and time will be arranged by the Registrar.

Note: While Extra Credit has its places, it has been overused and distorted. There are no extra credit opportunities in this course. Much extra credit is done at the expense of other work. If you wish to improve your grade, read, study, attend class, study harder. And *smarter*.

HELPFUL HINTS: When having difficulties, *seek help from the instructor* at the first indication of a problem. Set up study groups with other students in lecture and laboratory. Prepare for each class by reading the accompanying sections of the text to be covered that day and complete any assignments given. There are several resources available if extra help is needed.

DISABILITY: SERVICES The Biology Department embraces the position of the disability service providers at the college. “Students with disabilities who believe that they may need accommodations in the classroom are encouraged to contact a disability counselor as soon as possible. Students with learning disabilities should contact Andrea Henry, at extension 1805. Students with physical disabilities should contact Mary Berg, at extension 1425. Students at the Canton Campus should contact Stan Oliver at extension 2114 or 2117.”

STUDENT RESPONSIBILITIES: Freedom to teach and freedom to learn are inseparable facets of academic freedom. The freedom to learn depends upon appropriate opportunities and conditions in the classroom, on the campus, and in the larger community. The responsibility to secure and respect general conditions conducive to the freedom to learn is shared by all members of the academic community - students, faculty, and staff members.

The orderly operation of the college or classroom would suggest that students:

- Be prepared academically for each class.
- Attend class regularly.
- Turn off all cell phones, PDA’s and iPods before coming to class. During an exam or quiz, if a device in your possession makes any type of audible noise you will earn a zero.
- Arrive at class on time and remain until the end of the class.
- Consult with their instructor prior to class if it is necessary to leave class early.
- Adhere to the college policy prohibiting food, drink, smoking, and the use of tobacco in the classroom.
- Treat all college property with respect.
- Leave the classrooms and laboratories neat and tidy.
- Respect the rights of others to an education and not disturb the learning process in any way.
- Obtain a copy of the student handbook and become familiar with college policies and policies and procedures.

Academic integrity from the college catalog: “Students are responsible for maintaining the highest standards of academic honesty and integrity in this course. Violations of academic honesty will usually fall in one of two categories: cheating or plagiarism. Cheating includes, for example, copying or buying the work of others; hiring or persuading others to do work under a false name; concealing notes or other helpful materials during an exam; communicating with your classmates during an exam. Plagiarism is the use of another person’s work or ideas as one’s own without giving appropriate credit. In short, plagiarism is intellectual theft and is, therefore, taken seriously; consequently, using the ideas or language of others in an oral, written, technical, or artistic work must be properly acknowledged and documented. Students are responsible for understanding what constitutes plagiarism in their classes and should note that these offenses are often very easy for the instructor to catch.” In this class, the penalty for cheating and plagiarism will be a grade of zero for the work in question and possibly a failing grade for the course.

Tentative Schedule

Note: Schedule is subject to change. Pay attention in class for changes.

Date		Topic	Text Assignment*
Jan	26	Syllabus and Intro; What is Science?	1
	28		
Feb	2	What does life require?, and Diet: Cells and metabolism	2.1, 3
	4		
	9		
	11	Life on earth and Biodiversity and classification	2.2, 12
	16		
	18		
	23	PS, CR, and Global warming: Life in the greenhouse	4
	25		
Mar	2	EXAM 1	
	4	Evolution: Where did we come from?	9
	9		
	11	Natural selection: An evolving enemy	10
	16-18	NO CLASSES SPRING BREAK	
	23		
	25	Species and races: Who am I?	11
	30		
Apr	1		
	6	Population ecology: Is the human population too large?	13
	8		
	13	Human habitats and Conserving Biodiversity	15.4, 14
	15		
	20	NO CLASSES BROCKTON SCHEDULING DAY	
	22	EXAM 2	
	27	Genetics: Are you only as smart as your genes?	6
	29		
May	4		
	6		
	11	Review	

*Entire chapter unless otherwise stated. Read *before* coming to class.

The Final Exam will occur between May 14-19; time, date, and location TBA by Registrar.