

**Course Syllabus, Autumnal Semester 2013 C.E. (Last updated 14 August 2013 C.E.)**

BIO107: Introduction to Biotechnology  
Section Number 42297  
19 August - 13 December 2013 C.E.  
Lecture: MW 08:00-09:15 MON140  
Laboratory: MW 09:30-10:45 MON140

**Course Description:**

This course is an introduction to biotechnology and its global impact on society. It treats applications, laboratory techniques, limitations, and the international economic benefits, risks, and legal and moral issues associated with biotechnology. Prerequisites: None.

**Instructor Information:**

Dr. Ty C.M. Hoffman  
ty.hoffman@estrellamountain.edu  
Office Hours: By appointment

**Course Objectives:**

- To provide a level of science literacy for non-science majors applicable to personal and social issues
- To gain a better appreciation for the biological world and methods scientists use to explore how biological systems work

**Course Website:**

As stated on Canvas, you will be using my own (non-Canvas) website. The URL for the general site is:

<http://www.public.asu.edu/~thoffman>

From that site, you can find the link to your specific section. Be sure to bookmark the site, so you can access it even if Canvas is down. You are REQUIRED to check the website daily, even if nothing changes. The website includes (or will include) various resources to help you succeed. It is also where official announcements will be posted (whether I make those announcements in class or not). Failure to notice an announcement posted on the website will not be a valid excuse, so check the website frequently.

**Required Items**

Textbook (Biotechnology: A Laboratory Skills Course, ISBN 9780983239604)  
Closed-toe Shoes

**Attendance:**

I expect you to attend every class period. Doing so is important to earning a satisfactory grade. I do not grant you any points simply for attending, but you will lose points for not attending. I also expect you to appear in the classroom early enough so that you are completely ready to begin the day's activity at the scheduled beginning of class. If you walk through the door at the scheduled time, then you are late. Tardiness is rude and disruptive, and it will result in loss of points. Chronic tardiness will result in withdrawal from the class. If you are unable to make it to class on time, then you have enrolled in the wrong section.

## **Electronic Devices**

During the lecture portion of any class period (i.e., whenever I am talking), I will not tolerate any student using a cell phone, electronic tablet, or any other such device. If I see you doing so, you will lose all points for the day, which will be the same as not attending. Therefore, if you want to send messages to friends during class time, you might as well skip class and receive your zero from the comfort of home.

## **Rules Consent Form**

You will not be allowed to stay in the class unless you electronically submit the Rules Consent Form found on the website. I cannot overstate how important it is to fully read and understand that form. You can easily receive a zero if you take this lightly. Believe me; it happens every semester.

## **My Absolutely Rigid Policy on Missing Lecture Examinations:**

It's important for everyone to be aware of the policy regarding make-up lecture examinations. If you fail to complete a scheduled lecture examination by the deadline for that examination, there will be no official penalty for missing the examination. However, it is my strict policy that multiple-choice lecture examinations may be taken only when they are scheduled to be taken (i.e., per the most recently updated syllabus). This means that all make-up lecture examinations will consist of short-answer or essay type questions. NO MAKE-UP LECTURE EXAMINATION WILL EVER BE A MULTIPLE-CHOICE TEST. To ensure that you fully understand my policy, please re-read the previous sentence. The material treated on a make-up examination will be the same material treated on the corresponding multiple-choice version. In that sense, one can say that the make-up examinations are therefore no more difficult. But for many students in my experience, scores on short-answer tests are significantly lower than those on multiple-choice tests. This is because doing well on a short-answer test requires that you truly know what you're talking about. Guessing is much less likely to net you a correct answer. I'm telling you this, on the one hand, to make the official policy known. But even more importantly, I'm telling you this to strenuously dissuade you from missing a lecture examination for any but the most unavoidable of reasons. Doing well in this class REQUIRES that you make the class a priority. Therefore, if you'd like to receive a good grade, you would do well to save excuses for the other things that might coincide with the test dates, not vice-versa.

## **Disability Statement:**

The college will make reasonable accommodations for persons with documented disabilities. Students should notify Student Services and their instructors of any special needs.

## **MCCD Policies and Procedures:**

Estrella Mountain and all Maricopa Community Colleges are governed by the same policies and procedures which include information about nondiscrimination, compliance with regulations, health concerns, admissions, residency guidelines, financial assistance, academic advising, assessment, articulation, registration, tuition and fees, refunds, attendance, grading, records, and scholastic and disciplinary standards. These policies can be found in the academic catalog and student handbook and it is each student's responsibility to be informed of this information.

## **Laboratory:**

You must be concurrently enrolled in Section 42298. Attending the laboratory meetings requires that you wear closed-toed shoes. Other requirements will be discussed in the laboratory.

## Tentative Schedule of Topics to be Treated (This could change.):

Week	Date	Lecture Topic(s)	Laboratory Exercise(s)
01	19 Aug	Syllabus	Lab Safety Tools Of Biotechnology
	21 Aug	Scientific fundamentals I	Pipetting (Activity 2.2)
02	26 Aug	Scientific fundamentals II Products from biotechnology	Disk Diffusion Test (Activity 3.2)
	28 Aug	Scientific method	Analysis of Results for Disk Diffusion Test Quantifying Bacterial Numbers (Activity 3.5)
03	02 Sep	Observance of Labor Day (No Meeting)	
	04 Sep	The metric system	Analysis of Results for Quantifying Bacterial Numbers
04	09 Sep	Cells	Microscopy
	11 Sep	<b>Examination 1</b>	
05	16 Sep	DNA	
	18 Sep	Gene expression	DNA Extraction And Precipitation (Activity 2.1)
06	23 Sep	Plasmids	Bacterial Transformation With pGLO Plasmid (Activity 5.2)
	25 Sep	Restriction enzymes	Purification Of pGLO Plasmids (Activity 5.3)
07	30 Sep	Electrophoresis	DNA Quantitation (Activity 5.4)
	02 Oct	<b>Examination 2</b>	
08	07 Oct	Mendelian genetics I	Forensic DNA Fingerprinting (Activity 4.5) Part 1
	09 Oct	Mendelian genetics II Mutation	Forensic DNA Fingerprinting (Activity 4.5) Part 2
09	14 Oct	Rise of the Superbugs (Movie) PTC tasting	Tests for Genetic Traits
	16 Oct	Mitosis	Examination of Beet Root Cells
10	21 Oct	Meiosis	
	23 Oct	<b>Examination 3</b>	
11	28 Oct	Polymerase chain reaction	
	30 Oct	Transgenesis	
12	04 Nov		Biofuel Enzyme Assay (Activity 7.5)
	06 Nov	Genetically modified organisms & Horizontal gene transfer	Analysis of Results for Biofuel Enzyme Assay
13	11 Nov	Observance of Veterans' Day (No Meeting)	
	13 Nov		GMO Detection by PCR (Activity 6.2) Parts 1 and 2
14	18 Nov	Genetically modified foods	
	20 Nov	Rationale of the GM Foods exercise	GMO Detection by PCR (Activity 6.2) Part 3
15	25 Nov	<b>Examination 4</b>	
	27 Nov	Antibodies and immunity	
16	02 Dec	Cancer Warrior (Movie) ELISA	Serum Antibody Detection by ELISA (Activity 8.2)
	04 Dec	Proteomics	
FW	11 Dec	<b>Examination 5 (08:00)</b>	

### Disclaimer:

Course content and point allocation may vary from this outline to meet the needs of this particular group.

### Point Distribution:

Points for the course will come from a combination of examinations and laboratory assignments. The examinations will constitute roughly half of the grade.

### Grades:

The minimum final scores for the respective letter grades are given below.

86%	A
76%	B
66%	C
56%	D