



Biotechnology 1010
Introduction to Biotechnology
Itineris Early College High School

Instructor: Randy Booth Ph.D. Email: rbooth@iechs.org
Course website: <http://www.iechs.org/staff/booth/BTEC1010.htm>

Course Information: This class meets three times a week for 60 minutes (3 cr.).

Course Objectives:

Fundamentals of Biotechnology is a course designed to teach students the basic principles and techniques used in the field of biotechnology. Students will become familiar with the tools used in scientific research of the biology and chemistry of DNA and proteins. Career topics such as forensics, genetics, and agricultural, medicinal, and industrial biotechnology will also be covered.

Course Materials:

Introduction to Biotechnology by Thieman and Palladino
Supplementary Website : http://wps.aw.com/bc_palladino_biotech_2/

Grade and Corresponding Percentage

A	93 – 100 %	C	73 – 76.9%
A-	90 – 92.9%	C-	70 – 72.9%
B+	87 – 89.9%	D+	67 – 69.9%
B	83 – 86.9%	D	63 – 66.9%
B-	80 – 82.9%	D-	60 – 62.9%
C+	77 – 79.9%	E	below 60%

Grade Breakdown:

Attendance & Participation		150 pts
Homework / Quizzes (15)		150 pts
Exams (4)	100 pts each	400 pts
Final		150 pts
Total Points		850 pts

Evaluation:

Attendance and Participation Quizzes: Due to the accelerated pace of college courses, attendance and participation are extremely important and account for 150 pts of the final grade. Points can also be lost for inappropriate behavior (see Classroom Behavior Below). The Itineris Early College High School attendance policy does apply to this class.

Homework/Quiz: As this course is content intensive, it is imperative that each student complete the assigned readings and assignments to reinforce the concepts covered in class. A total of 150 points will be made up of homework assignments. Students will have one week to complete each assignment and assignments must be handed in on time at the beginning of class to receive full credit. If you anticipate that you may miss a class when an assignment is due, you need to turn it in prior to the due date to receive full credit. If the assignment is turned in within 24 hours of the due date, 25% of the points will be taken away. Assignments will be accepted up to a week late for 50% of the credit. No assignment will be accepted if more than a week late.

Exams: There will be a total of four in class exams that will each be worth 100 points. The final exam will be cumulative and worth 150 points. Failure to attend class on a test day without prior arrangement or extenuating circumstances will result in an alternative (more difficult) exam.

Course Schedule*:

Class	Topic	Text Unit
1	Introduction to Biotechnology/ cheese lab	
2	Data Analysis/scientific method	
3	The Biotechnology Century	1.1-1.3
4	DNA & Cells	2.1-2.2
5	Replication	2.3
6	Transcription & Translation	2.4
7	Gene Expression Control	2.4
8	Mutations	2.5
9	Review	
10	Exam 1	
11	Recombinant DNA Technology - Restriction Enzymes	3.1
12	Vectors	3.2
13	Gel Electrophoresis	3.4
14	PCR	3.3
15	Applications of recombinant DNA Technology	3.4
16	Bioinformatics & NCBI	3.5
17	Review	
18	Exam 2	
19	Intro to Proteins	4.1-4.2
20	Protein Structure	4.3
21	Enzymes - Structure vs Function	
22	Protein Production	4.4
23	Protein Purification	4.5
24	Verification - SDS-PAGE	4.6-4.10
25	Review	
26	Exam 3	
27	Harvest of Fear 1	
28	Harvest of Fear 2	
29	Vaccines	5.4 5.1-5.3,5.5-
30	Microbial Biotechnology	5.7

31	Plant Biotechnology	6.1-6.4
32	Animal Biotechnology	7.1-7.5
33	Aquatic Biotechnology	10.1-10.6
34	DNA Fingerprinting & Forensic Analysis	8.1-8.7
35	Medical Biotechnology	11.1-11.5
36	Bioremediation	9.1-9.6
37	Bioremediation	9.1-9.6
38	Review	
39	Exam 4	
40	Biotechnology Workforce	1.4
41	Biotechnology Regulations	12.1-12.5
42	Patents	12.6-12.7
43	Ethics & Biotechnology	13.1-13.3
44	Ethics & Biotechnology	13.1-13.3
45	Finals Week	
46	Finals Week	
47	Finals Week	

* This schedule is tentative and may be modified as the semester progresses to better fit the needs of the class

Classroom Policies Biotech 1010

Students' conduct and dress should be in accordance with Jordan School District and Salt Lake Community College policies. Failure to learn the policies is not an excuse. A link for the Jordan School District policy of student conduct can be found on the course website.

Dress Code: Students shall dress in a manner that shows respect for the educational environment, is befitting the day's activities, and is consistent with the Jordan School District policies. No open toed shoes during laboratory exercises (bring and extra pair of shoes if necessary). Failure to dress appropriately will prevent a student from participating and result in loss of points.

Classroom Behavior: Students who demonstrate through their actions to be a distraction from a learning environment will be dismissed from class for the day. If multiple offenses occur that student may be asked to not return to the class and will receive a failing grade.

Academic Honesty: Students will be expected to adhere to the Itineris Early College High School academic honesty policy. And violation of this policy will result in a minimum of a zero for the assignment and could lead to dismissal from the course with a failing grade. The academic honesty policy can be found at <http://www.iechs.org/docs/AcademicHonestyPolicy.pdf>.

Cell phones and other electronic devices:

Possession of a cellular telephone by a student is a privilege that may be forfeited by any student that uses their cell phone inappropriately. Cellular telephone use during classroom time, instructional activities and field trips is prohibited. Cellular telephones must remain off during these times. Cells phones will not be tolerated in class and 5 points will be deducted from a students' grade each time a cell phone is seen, heard, or used in the classroom or lab. Calculators are available for checkout at the front office. Blatant disregard for cell phone policy will result in dismissal from class for the day.

Food:

This course is held in a classroom that is half lecture and half lab. It is important for your safety to keep all food and drink only in the lecture portion of the classroom. Failure to keep food and drink out of the laboratory area will result in a verbal warning and possible dismissal for the day with loss of points. Snacks and a beverage are allowed according to the building policies wherein the lecture is located. However, class time is not meal time. If you bring a meal to class you will be excused until you finish the meal and any points earned while you were absent will be forfeited. Remember that there is **no food or drink in the laboratory.**

Laboratory Activities:

Occasionally there will be demonstrations and activities in the lecture portion of the course. During these activities it is important to follow safety policies the same as you would if you were in the laboratory including:

ABSOLUTELY NO food or drink in the laboratory

Do not taste chemicals

No pipetting by mouth

Use lab equipment properly and only after instruction

Always clean up after yourself

Report accidents immediately to the instructor

Your commitment to the lab safety rules and your respect of the property in the laboratory are absolutely necessary. If intentional misuse or abuse of the lab and its property is intended, you may be removed from the course.

Disease Education:

During the course of Biotechnology the topics of viruses, bacteria, and disease transmission will be discussed. This topic MAY address the issues of AIDS/HIV and other health issues. **State law requires that written parental consent must be obtained before a student can participate in learning about contraception devices and/or substances that includes issues such as AIDS/HIV and that parents be given the opportunity to review the curriculum. The curriculum of this course does not include the topics of contraception, but we will discuss the process of viral infection as it pertains to the field of biotechnology.**

BTEC 1010 Agreement

I have read and I understand the policies for the BTEC 1010 lecture course and agree to abide by the concepts outlined in the syllabus and disclosure statement.

Student's printed name _____

Student's Signature _____ Date _____

My student has discussed with me the syllabus and the disclosure statement for the BTEC 1010 and I agree with the documents and support my student in abiding by their precepts.

Parent/Guardian's Signature _____