

COURSE TITLE: Biotechnology 1

Level of Difficulty	Estimated Homework	Prerequisites
Difficult	30-60 minutes	District: B- or better in CP Chemistry B- or better in CP Biology Department Suggestion: B- or better in CP Chemistry B- or better in CP Biology

Course Description:

Biotechnology uses biological processes for industrial and other purposes, especially the genetic manipulation of microorganisms for the production of products that benefit human life including antibiotics, hormones, and food. In Biotechnology 1, students will gain proficiency with lab protocols and lab procedures, as well as gain a deeper understanding of the principles of modern biotechnology, particularly from a pharmaceutical perspective. Students will use both their biology and chemistry backgrounds throughout the course.

Students will revisit previously studied topics including biochemistry, DNA structure and replication, protein synthesis, molarity and solution preparation at a greater level of depth. Students will then apply these concepts and skills in the Amgen Biotechnology Experience where they will grow bacteria, transform bacteria and perform column chromatography. At the end of this course, students should have an understanding of the following:

- Standard Lab Operating Procedure: Notebooks, Equipment and Practices
- DNA Science: Principles and Applications
- Experimental Design and the Utility of Common Techniques in Molecular Biology

Grading:

The grading system is based on weighted percentages. Each assignment will have a point value within the weighted category. Assessments and labs are weighted more heavily than homework. Individual teachers may make modifications on the weighted percentages. There will also be a cumulative end of course final exam.

Syllabus:

Check teacher websites

Supplemental Information:

Students have the opportunity to earn 4 college credit hours at no cost to the student through the Moorpark Articulation Program. In order to earn these credits, students must maintain an A, B, or C in Biotechnology 1, pass the Moorpark College Final exam, and pass the lab notebook component. The grade the student earns in Biotechnology 1 is the grade that will be on the college transcript.

Homework Estimate: This is a general guideline for planning and scheduling purposes. A student's ability level may affect actual preparation time needed.

As a CTE course, there is a field trip and guest speakers.