

# Biotechnology

## Course Syllabus

**Teacher: Mrs. Retzlaff or Miss. Porior**  
**Phone #: (920) 848-4467**

**Room #: 202**  
**e-mail: cryretzl@ocontofalls.k12.wi.us**  
**betporio@ocontofalls.k12.wi.us**

### Description

This science based laboratory course deals with using scientific processes to create new organisms or new products from living organisms. Some of the laboratory work will include studies with cloning, plant tissue culture, ELISA testing of genetic traits, DNA extraction from plant and animal materials, phenotype experiments, artificial insemination, embryo transfer, product fermentation, yeast studies and insect studies. Students will learn how to complete electrophoresis using different DNA, forensic testing and other DNA sampling. In addition, issues related specifically to the biotechnology industry, such as understanding the product development process, ethical, legal and social concerns will be addressed. Other equipment students may use are hot plates, pipettes, incubators and water baths.

### Units

- I: What is Biotechnology? – 6 days
- II: Bioterrorism – 10 days
- III: Basic Cell Structure – 13 days
- IV: Genetics and DNA – 16 days
- V: Forensics – 15 days
- VI: Genetic Engineering and Transgenic Organisms – 5 days
- VII: Plant Biotechnology – 5 days
- VIII: Animal Biotechnology – 5 days
- IX: Food Biotechnology – 5 days
- X: Environmental Biotechnology – 5 days
- XI: Microbial Biotechnology – 5 days

### Activities:

- One Bite out of Crime
- Edible Cells
- Gel Electrophoresis
- Cloning
- ELISA testing
- Phenotypic experiments
- Plant tissue cultures
- Nutritional studies

### Grading:

Students will receive points for daily effort, assignments, quizzes, labs, tests, projects and reports. Extra credit may be given.

A	92 – 100%
B	83 – 91%
C	74 – 82%
D	65 – 73%
F	below 65%

