



**KENOSHA UNIFIED SCHOOL DISTRICT NO. 1  
CURRICULUM AND INSTRUCTIONAL SERVICES**

**COURSE SYLLABUS FOR ADVANCED BIOTECHNOLOGY  
(424011 & 424012)**

**Number of Credits:** 1      **Location:** Indian Trail Academy

**Prerequisites:** Teacher permission

**Course Description**

Students in this course study units such as: recombinant DNA, hybridization, genetic code, microbial fermentation, genetic engineering; sterile techniques; environmental cleanup; food production; fuels; preparation, collection, and analysis of samples; and general skills that a laboratory technician would employ. Applications of biotechnology can be made in agriculture; food production; fuel consumption; hazardous waste disposal; and genetics of plants, animals, humans, and ecology. Students enrolled in this course may apply for enrollment in the Wisconsin State Youth Apprenticeship Program.

**Course Standards**

Standard A: Science Connections

Standard B: Nature of Science

Standard C: Science Inquiry

Standard F: Life and Environmental Science

Standard G: Science Applications

Standard H: Science in Social and Personal Perspectives

*Most essential benchmarks may be viewed at: [www.kusd.edu](http://www.kusd.edu).*

**Lifelong Learning Standards**

- Knowledgeable person
- Effective communicator
- Quality producer
- Complex thinker
- Self-directed learner
- Contributing citizen

*Lifelong learning benchmarks may be viewed at: [www.kusd.edu](http://www.kusd.edu).*

**Course Outline**

1. Introduction to Biotechnology
2. Cellular Biology Review
3. Basic Skills of Biotechnology
4. DNA
5. Proteins
6. Genetic Engineering
7. Bringing Biotech Products to Market
8. Plant Biotechnology
9. Plant Cloning
10. Biotechnology in Medicine

11. Making DNA Molecules
12. Advanced Techniques of Biotechnology
13. Genetic Engineering Final Project

**Board-Approved Instructional Materials**

Daugherty, Ellyn (2008). *Biotechnology, Science for the New Millennium*, EMC Publishing. and accompanying lab manual.

**Methods of Assessment**

Final exams should be cumulative in nature, emphasizing the most essential benchmarks for the course. Results of the final exam represent 20 percent of the final grade, but this single measure *may not* drop a student’s grade by more than one letter grade. In courses that rely heavily on a major project, performance exhibition, etc., the project should be divided into stages or components and each of those should be graded separately, providing students with frequent and specific feedback.

**Board-Approved Grading Scale**

Excerpts taken from School Board Rule 6452

**GRADING SCALE**

A+=98-100 percent	B+=86-89 percent	C+=76-79 percent	D+=66-69 percent
A=93-97 percent	B=83-85 percent	C=73-75 percent	D=63-65 percent
A-=90-92 percent	B-=80-82 percent	C-=70-72 percent	D-=60-62 percent
			F=0-59 percent

**MAKE-UP WORK**

Students submitting work up to ten school days late without prior approval may receive up to two grades lower on the work than they would have received if the work had been submitted on time (i.e., B+ lowered to a D+). Student work submitted after ten school days without prior approval shall not be accepted for credit and shall be recorded with a score of zero.

Upon returning to school after an absence, a student has the responsibility within the number of days equal to the length of the absence or suspension to meet with the teacher to develop a plan for making up missed work, quizzes, and examinations. A truant student has the responsibility on the first day he or she returns to the course/class to meet with the teacher to develop a plan for making up missed work, quizzes, and examinations. Lower grades may not be given for late work due to excused absences, suspension, or truancy unless the work is submitted later than agreed upon deadlines.

**See Rule 6452 in its entirety at: [www.kusd.edu](http://www.kusd.edu).**