The Biotechnology program offers rigorous college level curriculum that explores concepts and skills that are high demand in the biological sciences. Proposed dual enrollment opportunities for University of Arizona\* credit are available for both Biotechnology I and Biotechnology II. Students are also granted membership in HOSA (Health Occupations Students of America) which provides leadership, competition, and scholarship opportunities to members.

**Basha High School CTE: Biotechnology Program**

**Biotech I: Tentative Course Syllabus** Pre-Requisites: Biology and 10th, 11th, or 12th grade

Semester 1

* Lab Safety and Quality Control
* ****History of Biotech and Industry
* Legal Scientific Notebooks and Scientific Inquiry
* Lab Techniques (Spectrophotometry, pH, solutions, making media, microscopes, aseptic technique, bacteria culture, staining)
* Cells and Model Organisms (*E. coli, Drosophilia)*

Semester 2

* DNA and RNA Structure and Function
* DNA Recombination and Electrophoresis
* Polymerase Chain Reaction (PCR)
* Bacterial Transformations
* Bioinformatics
* Soils and Environmental Biotech

\*Bioethics and Inquiry Spread Throughout\*

**Biotech II: Tentative Course Syllabus** Pre-Requisites: Biotech I and 11th or 12th grade

Semester 1

* ****Review Lab Skills
* Quality Control
* Advanced Microbiology
* Model Plant Organisms
* Plant Anatomy and Physiology
* Plant Tissue Culture

Semester 2

* Hydroponics
* Protein Structure
* Protein Quantification and Isolation
* Genetically Modified Organisms
* Immunology and Infectious Disease
* Research and Internship Projects

\*Bioethics and Inquiry Spread Throughout\*

**Dual Enrollment for University of Arizona Credit\***

**Heavy Lab and Project Based Curriculum**

Certification to work in a lab after BOTH courses!

\* Dual Enrollment for University of Arizona in the approval process