

# Health Science: Biomedicine

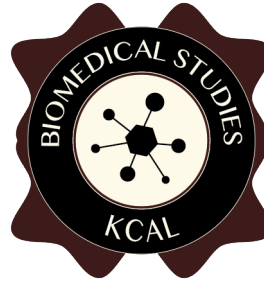
## Public Service Endorsement

### Career Pathways

- Biochemist
- Biomedical Engineer
- Biophysicist
- Physician, Surgeon

### Certifications / Certificate Options

- CPR
- OSHA



| Program of Study<br>Course Sequence    | 9th. Grade                                   | 10th. Grade   | 11th. Grade  | 12th. Grade   |
|--|--|---|--|---|
| <b>Health Science:<br/>Biomedicine</b> | <b>Medical<br/>Terminology</b><br>(1 Credit) | <b>Health Science<br/>Theory</b><br>(1 Credit)<br><i>Prerequisite:</i><br><b>**Principles of Health<br/>Science, Medical<br/>Terminology, and<br/>Biology</b> | <b>Medical Microbiology</b><br>(1 Credit)<br><b>AND Anatomy and<br/>Physiology (at KCAL)</b><br>(1 Credit)<br><i>Prerequisite:</i><br><b>Health Science Theory<br/>and Biology</b> | <b>World Health<br/>Research</b><br>(1 Credit) <b>AND<br/>Pathophysiology</b><br>(1 Credit)<br><i>Prerequisite:</i><br><b>3 credits in Health Science<br/>Program</b> |

### Program Highlights

- Pathogen Analysis
- Human Anatomy & Physiology
- DNA / Genomics
- Laboratory Procedures
- Dissection
- Grow and Culture Bacteria
- Real World Research
- Learn to Treat Patients

### CTSO(s)

- HOSA - Future Health Professionals

### Program Fees / Requirements

- HOSA membership (Optional)

### Program Location

- Course(s) available at CHS
- Course(s) available at FRHS
- Course(s) available at KHS
- Course(s) available at TCHS
- Grey courses at KCAL (Only)  
(Except Anatomy & Physiology)

Biomedical engineering represents new areas of medical research and product development; biomedical engineers' work helps pave the way for new ways to help treat injuries and diseases. As medicine is a field with vast numbers of specific disciplines, there are many different sub-fields in which biomedical engineers work. Some work to improve and develop new machinery, such as robotic surgery equipment; others endeavor to create better, more reliable replacement limbs (or parts which help existing limbs function better, such as joint replacements). New and more comfortable patient beds, monitoring equipment, and electronics are also products that often begin as concepts from the biomedical engineer's or involve some level of input from them.

### KISD Biomedical Program:

Biomedicine classes in KISD aim to prepare students to enter the health care field by giving them a foundation in real world problems, medical treatments, and a better understanding of the human body. Students will investigate causes and treatments of diseases that affect the entire world as well as ones found in our own community. Students learn advanced techniques used in hospitals and research labs and will become familiar with protocols used by doctors and researchers today. Biomedicine also prepares students who want to go further in the KISD Health Science Pathway and take classes such as Emergency Medical Technician (EMT), Certified Nursing Assistant (CNA), Clinical Rotations, and Pharmacy Technician.

**Medical Terminology (TEDS: 13020300 / KISD: 81801)**

This course is designed to introduce students to the structure of medical terms, including prefixes, suffixes, word roots, combining forms, and singular and plural forms, plus medical abbreviations and acronyms. The course allows students to achieve comprehension of medical vocabulary appropriate to medical procedures, human anatomy and physiology, and pathophysiology.

**Health Science Theory (TEDS: 13020400 / KISD: 81803)**

The Health Science Theory course is designed to provide for the development of advanced knowledge and skills related to a wide variety of health careers. Students will have hands on experiences for continued knowledge and skills development. The course may be taught by different methodologies such as clinical rotation and career preparation learning.

**Medical Microbiology (TEDS: 13020700 /KISD: 81821)**

This science elective course is designed to explore medical based microbiology. The student will discover relationships between microbes and health maintenance as well as the role of microbes in infectious diseases. To receive credit in science, students must meet the 40% laboratory and fieldwork requirement identified in §74.3(b)(2)(C) of this title (relating to Description of a Required Secondary Curriculum). Class is taught at the Keller Center for Advanced Learning.

**Anatomy and Physiology (TEDS: 13020600 / KISD: 3203)**

This course offers a comprehensive study of the structures and functions of the human body. It will include dissections and the study of the organization of organs and organ systems. Students will utilize critical thinking skills and scientific problem solving as they conduct lab investigations. To receive credit in science, students must meet the 40% laboratory and fieldwork requirement identified in §74.3(b)(2)(C) of this title (relating to Description of a Required Secondary Curriculum). This course is taught at the all main campuses and at the Keller Center for Advanced Learning.

**World Health Research (TEDS: 13020900 / KISD: 81823)**

This course examines major world health problems and emerging technologies as solutions to these medical concerns. The course is designed to improve students' understanding of the cultural, infrastructural, political, educational, and technological constraints and inspire ideas for appropriate technological solutions to global medical care issues. Class is taught at the Keller Center for Advanced Learning.

**Pathophysiology (TEDS: 13020800 / KISD: 81822)**

In this course students conduct laboratory investigations and fieldwork, use scientific methods during investigations, and make informed decisions using critical thinking and problem solving. Students study disease processes and how humans are affected. Emphasis is placed on prevention and treatment of diseases. Students will differentiate between normal and abnormal physiology. To receive credit in science, students must meet the 40% laboratory and fieldwork requirement identified in §74.3(b)(2)(C) of this title (relating to Description of a Required Secondary Curriculum). Class is taught at the Keller Center for Advanced Learning.