



HEALTHCARE SCIENCE


A GUIDE TO PURSUING YOUR CAREER PATH


BIOTECHNOLOGY RESEARCH & DEVELOPMENT >>>


The field of biotechnology combines knowledge from a number of other areas: engineering, biology, chemistry, and medicine. Workers in biotechnology create, design, develop, and evaluate systems and products such as artificial organs, medication information systems, prostheses (artificial devices replacing missing body parts), medical equipment and instrumentation, and health management and care systems. Tasks associated with careers in biotechnology include researching new materials for biomedical equipment (such as artificial organs), evaluating the safety of such equipment, utilizing computer simulation of the body's organs and systems, designing and developing new procedures and equipment for detecting disease, and advising hospitals and other medical facilities on the use of new and existing medical equipment.

Biotechnology research and development focuses on cellular life processes to assist in the diagnosis of diseases and produce more effective medications and vaccines for patients.

HIGH SCHOOL PATHWAY CLASSES >>>

 **INTRO TO HEALTHCARE SCIENCE** enables students to glean initial exposure to the many HCS careers. The concepts of human growth & development, interaction with patients & family members, health, wellness, and preventative care are evaluated, as well as the legal, ethical responsibilities of today's healthcare provider. Fundamental skills development include microbiology, basic life support and first aid.

 **ESSENTIALS OF BIOTECHNOLOGY** introduces students to the broad understanding of the fundamentals of biotechnology and the impact on society. The knowledge and skills in this course provides a basic overview of current trends and careers in biotechnology, with an emphasis on basic laboratory skills, along with the business, regulatory, and ethical aspects of biotechnology. **This course meets the 4th science requirement and is recognized by the Board of Regents as such.**

 **APPLICATIONS OF BIOTECHNOLOGY** includes additional applications and techniques in biotechnology that expand the student's comprehension of how biotechnology utilizes living systems to create products and enhance lives. Bioscience and the application of laboratory technique to the manipulation of living systems is a cornerstone of pharmaceutical, medical device, forensic science, environmental science, agriculture, alternative fuel, and green chemistry. **This course meets the 4th science requirement and is recognized by the Board of Regents as such.**



CAPSTONE: WBL INTERNSHIP >>>

WBL (WORK-BASED LEARNING) connects skilled, knowledgeable and driven students to local businesses every year. Students who participate in the Healthcare Science program and have been selected to participate in WBL will leave school early to work with our fantastic business partners. Benefits to students include a chance to put skills learned in the classroom to use in an authentic setting, getting a competitive advantage on their career and networking with industry leading professionals all while still in high school. www.hallcowbl.org



CAREER TECH STUDENT ORGANIZATIONS >>>

HOSA operates as an integral component of the health science education curriculum. Through its network of state and local chapters, HOSA provides powerful instructional tools, recognition, leadership, networking, scholarships, and connections to the healthcare industry to thousands of members across the United States.

Through the HOSA Competitive Events Program, members can compete in teams or as individuals in over 55 different events related to all aspects of the health care industry. HOSA integrates into the Health Science Technology Education curriculum to develop and recognize smart, dedicated, and passionate future health professionals.



POTENTIAL CAREERS >>>

National labor market information indicates that 8 out of the top 20 fastest-growing occupations are in the Health Science industry. (OOH)

- Radiologist
- Phlebotomist
- Pathologist
- Geneticist
- Pathology Assistant
- Electrocardiographic Tech
- Nuclear Medicine Tech
- Cardiovascular Technologist
- Clinical Laboratory Scientist
- Biomedical Research Scientist
- Clinical Lab Technician
- Biomedical Engineer
- Diagnostic Sonographers

BIOTECHNOLOGY RESEARCH & DEVELOPMENT

CAREER PATHWAY - PLAN OF STUDY

GRADUATION REQUIREMENTS

ENGLISH/LANGUAGE ARTS

4 Units *Must Include:*

9th Grade Literature & American Literature

SOCIAL STUDIES

3 Units *Must Include:*

World History, US History, Government & Economics

MATHEMATICS

4 Units *Must Include:*

GSE Algebra I, GSE Geometry & GSE Algebra II

+

one additional GSE/AP/IB/DE Math course

OR

GSE Accelerated Algebra I/Analytic Geometry A,

GSE Accelerated Geometry B/Algebra II, GSE Precalculus

+

one additional GSE/AP/IB/DE Math course

SCIENCE

4 Units *Must Include:*

Physical Science or Physics; Biology;

Chemistry, Earth Systems, Environmental Science or AP/IB course

+

one additional Science course

HEALTH & PERSONAL FITNESS

1 Unit *Must Include:*

1/2 unit of each

CAREER, TECHNICAL & AGRICULTURE EDUCATION (CTAE)

3 Units *Must include:*

Intro to Healthcare Science, Essentials of Biotechnology,
Applications of Biotechnology

ELECTIVES

4 Units

*Students planning to attend most post-secondary institutions must take 2 units of the same modern language.

TOTAL UNITS REQUIRED

23 Units

PERSONAL APTITUDES

ACTIVITIES THAT DESCRIBE WHAT I LIKE TO DO:

- Work under pressure.
- Help sick people and animals.
- Participate in health and science classes.
- Respond quickly and calmly in emergencies.
- Work as a member of a team.



PERSONAL QUALITIES THAT DESCRIBE ME:

- Compassionate and caring
- Good at following directions
- Conscientious and careful
- Patient
- Good Listener

WANT MORE INFORMATION ON YOU?

YouScience is the science of YOU – how your mind is wired, what makes you tick, the skills and knowledge that set you apart. You have talent and there's a path that's right for you – we can help you find it.



Login to Infinite Campus and locate the SLDS Portal link on the left. Once logged in, click on "My Career Plan" then choose "Go to YouScience".

WHAT YOU LEARN IN SCHOOL MATTERS

You're learning skills and knowledge that can make you a qualified candidate for in-demand careers. Industry-recognized certifications, available to all pathway students, are great signals to employers that you have the skills they're looking for. Certifications help validate what you know, so other people know, that you know it.

QUESTIONS?

Contact your CTAE teacher, WBL Coordinator or School Counselor

PATHWAY TO FUTURE CAREER OPTIONS

HIGH SCHOOL

Pathway Courses

Intro to Healthcare Science
Essentials of Biotechnology
Applications of Biotechnology

Capstone

WBL Internship
Dual Enrollment

POST-SECONDARY

Technical College

Certificate
Diploma Program
Degree Program

4 Year College/University

Bachelor Degree
Masters Degree
Graduate Studies