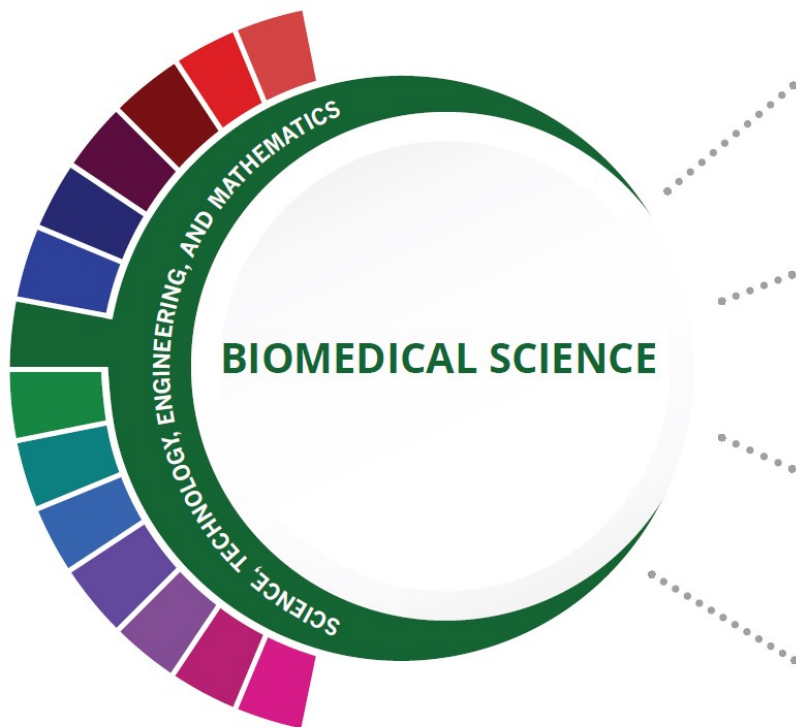




BIOMEDICAL
SCIENCE

HEALTHCARE
DIAGNOSTICS

HEALTHCARE
THERAPEUTICS



Level 1 Principles of Biomedical Science (PLTW)

Human Body Systems (PLTW)

Level 2

Medical Interventions (PLTW)

Level 3

Biomedical Innovation (PLTW)
Practicum in Science, Technology, Engineering and Mathematics
ISM - Scientific Research and Design

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Medical Laboratory Assistant	Medical and Clinical Laboratory Technologists	Histologic Technician	Biomedical Engineers	Genetic Counseling
Medical Laboratory Technician		Clinical Laboratory Science/ Medical Technology/ Technologist	Biomedical Engineers	Medical Scientists
FHS – COVID-19 Contact Tracing Certification John Hopkins University			Clinical Laboratory Science/ Medical Technology/ Technologist	Epidemiology

Additional industry-based certification information is available on the TEA CTE website. For more information on postsecondary options for this program of study, visit TXCTE.org.

Occupations	Median Wage	Annual Openings	% Growth
Medical and Laboratory Technicians	\$37,981	1,159	28%
Biological Technicians	\$42,931	452	17%
Forensic Science Technicians	\$48,152	171	35%
Chemical Technicians	\$49,733	672	10%
Medical and Clinical Laboratory Technologists	\$58,760	1,166	25%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Health Occupations Students of America (HOSA)	Lab internship or shadow a healthcare or medical professional

The Biomedical Science program of study focuses on the study of biology and medicine in order to introduce CTE learners to the knowledge and skills necessary to be successful in the healthcare field, such as researching and diagnosing diseases, pre-existing conditions, or other determinants of health. Students may also practice patient care and communication.



The Science, Technology, Engineering, and Mathematics (STEM) Career Cluster focuses on planning, managing, and providing, scientific research and professional and technical services, including laboratory and testing services, and research and development services.

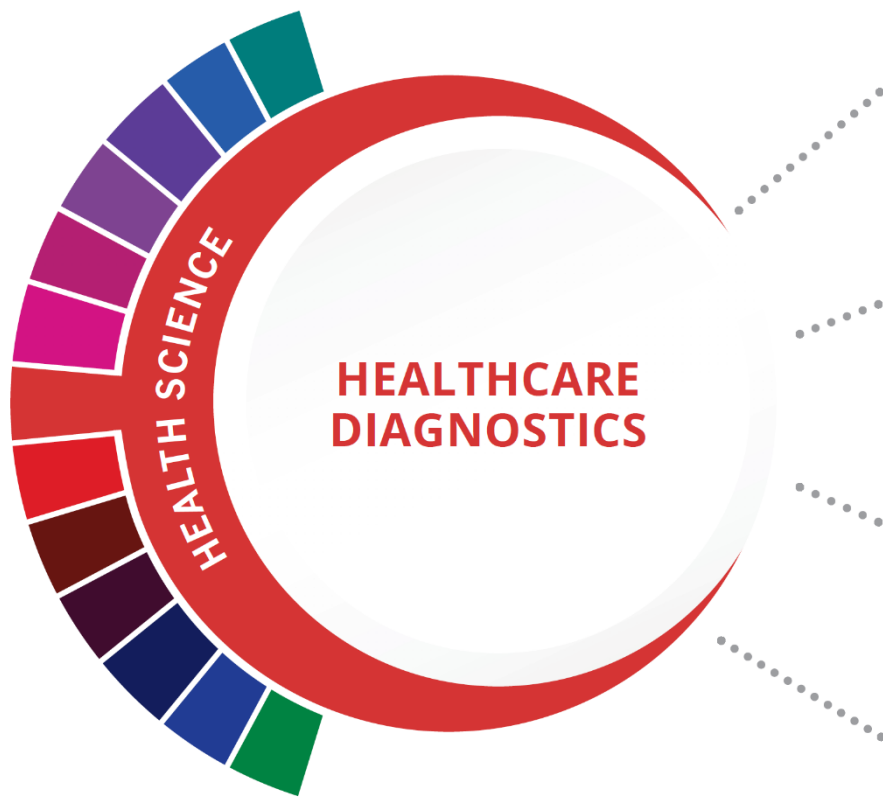
Successful completion of the Biomedical Science program of study will fulfill requirements of the Public Service or STEM endorsement if the math and science requirements are met.

Revised - July 2020

COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
5410W Principles of Biomedical Science (PLTW - PBS)	N1302092 (1 credit)	None	9-11
5425W Human Body Systems (PLTW - HBS) May count as science credit	13020600 (1 credit)	PREQ: Biology and completed/concurrent Chemistry; Recommended PREQ: 1 course from Health Science or Biomedical	10-12
5415W Medical Interventions (PLTW - MI) May count as science credit	13020800 (1 credit)	PREQ: Biology, Chemistry; Principles of Biomed or Human Body Systems	11-12
5440W Biomedical Innovation (PLTW - BI)	N1302095 (1 credit)	PREQ: Principles of Biomed or Human Body Systems and Medical Interventions	12
0030 ISM - Scientific Research and Design	13037200 (1 credit)	PREQ: Biology, Chemistry, IPC, or Physics	11-12
5085 Practicum in STEM	13037400 (2 credits)	PREQ: Algebra I and Geometry Recommended PREQ: 1 course in Biomedical Science	12

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS
BIOMEDICAL SCIENCE



Medical Terminology

Level 1

Principles of Health Science
Human Body Systems

Level 2

Health Science Theory
Health Sci. Theory/Clinical
Medical interventions

Level 3

Practicum in Health
Science – CCMA
Practicum in Health
Science – EMT

Level 4

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
Limited Licensed Radiology Technologist	Medical Sonographer	Nuclear Medical Technology/ Technologist	Nuclear Medical Technology/ Technologist	Radiologist
FHS EKG/ECG Technician	Radiologic Technologist	Magnetic Resonance Imaging (MRI) Technology/ Technician	Medical Radiologic Technology/ Science - Radiation Therapist	Radiologic Technology/ Science - Radiographer
Medical Laboratory Technician				
FHS Phlebotomy Technician				

Additional industry-based certification information is available on the TEA CTE website. For more information on postsecondary options for this program of study, visit TXCTE.org.

Occupations	Median Wage	Annual Openings	% Growth
Diagnostic Medical Sonographers	\$69,909	495	35%
Phlebotomists	\$30,597	1442	36%
Nuclear Medicine Technologists	\$75,962	91	13%
Radiologic Technologists	\$55,494	1196	19%
Magnetic Resonance Imaging Technologists	\$68,661	217	21%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Health Occupation Students of America (HOSA)	Clinical rotations at a community wellness center, hospital, assisted living, nursing home

The Healthcare Diagnostics program of study introduces students to occupations and education opportunities related to performing complex medical laboratory tests for the diagnosis, treatment, and prevention of disease. This program of study may also include exploration into the opportunities associated with blood laboratories as well as radiologic technology and ultrasound technology.



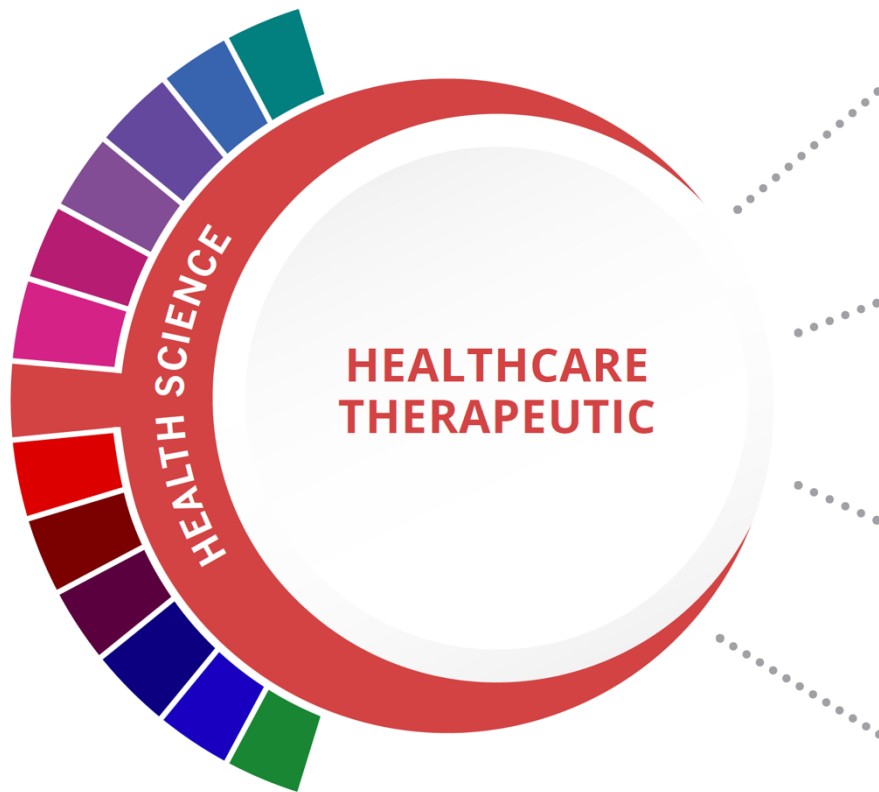
The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development. To pursue a career in the health science industry, students should learn to reason, think critically, make decisions, solve problems, communicate effectively, and work well with others.

Successful completion of the Healthcare Diagnostics program of study will fulfill requirements of the Public Service or STEM Endorsement if the math and science requirements are met. Revised- July 2020

COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
4845 Medical Terminology	13020300 (1 credit)	None	9-12
5430 Principles of Health Science (satisfies 0.5 Health Credit)	13020200 (1 credit)	None	10-12
5431 Health Science Theory 5450 Health Science Theory/Clinical	13020400 (1 credit) 13020410 (2 credits)	PREQ: Biology	11-12
5425W Human Body Systems	13020600 (1 credit)	PREQ: Biology and completed/concurrent Chemistry; Recommended PREQ: 1 course from Health Science or Biomedical	10-12
5415W Medical Interventions	13020800 (1 credit)	PREQ: Biology, Chemistry; Principles of Biomed or Human Body Systems	11-12
Practicum in Health Science 5435 CCMA 5434 EMT (Dual Credit)	13020500 (2 credits) 13020510 (2 credits)	PREQ: Health Science Theory and Biology	12

HEALTH SCIENCE CAREER CLUSTER
HEALTHCARE DIAGNOSTICS



Medical Terminology

Level 1

Principles of Health Science
Human Body Systems

Level 2

Health Science Theory
Health Sci. Theory/Clinical
Medical Interventions

Level 3

Practicum in Health
Science – CCMA
Practicum in Health
Science – EMT

Level 4

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
Registered Dental Assistant	Dental Assistant	Dental Hygienist	Dental Hygienist	Dentist
FHS Certified Patient Care Technician	Surgical Technologist	Medical/ Clinical Assistant		Physician Assistant
FHS Certified Clinical Medical Assistance	Medical Assistant			Family and General Practitioners
FHS Emergency Medical Technician	Pharmacy Aides			Pharmacist

Occupations	Median Wage	Annual Openings	% Growth
Medical Assistants	\$29,598	8,862	30%
Surgical Technologists	\$45,032	1,150	20%
Dental Hygienists	\$73,507	1,353	38%
Physicians and Surgeons	\$213,071	1,151	30%
Dental Assistants	\$34,840	4,422	31%

**WORK BASED LEARNING AND EXPANDED
LEARNING OPPORTUNITIES**

Exploration Activities:	Work Based Learning Activities:
SkillsUSA Health Occupation Students of America (HOSA)	Volunteer at a community wellness center, hospital, assisted living, or nursing home.

Additional industry-based certification information is available on the TEA CTE website. For more information on postsecondary options for this program of study, visit TXCTE.org.

The Healthcare Therapeutic program of study introduces students to occupations and educational opportunities related to diagnosing and treating acute, episodic, or chronic illness independently or as part of a healthcare team. This program of study also includes an introduction to the opportunities associated with providing treatment and counsel to patients as well as rehabilitative programs that help build or restore daily living skills to persons with disabilities or developmental delays.



The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development. To pursue a career in the health science industry, students should learn to reason, think critically, make decisions, solve problems, communicate effectively, and work well with others.

Successful completion of the Healthcare Therapeutic program of study will fulfill requirements of a Public Service endorsement or STEM endorsement if the math and science requirements are met. Revised - July 2020

COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
4845 Medical Terminology	13020300 (1 credit)	None	9-12
5430 Principles of Health Science (satisfies 0.5 Health Credit)	13020200 (1 credit)	None	10-12
5431 Health Science Theory 5450 Health Science Theory/Clinical	13020400 (1 credit) 13020410 (2 credits)	PREQ: Biology	11-12
5425W Human Body Systems	13020600 (1 credit)	PREQ: Biology and completed/concurrent Chemistry; Recommended PREQ: 1 course from Health Science or Biomedical	10-12
5415W Medical Interventions	13020800 (1 credit)	PREQ: Biology, Chemistry; Principles of Biomed or Human Body Systems	11-12
Practicum in Health Science 5435 CCMA 5434 EMT (Dual Credit)	13020500 (2 credits) 13020510 (2 credits)	PREQ: Health Science Theory and Biology	12

HEALTH SCIENCE CAREER CLUSTER
HEALTHCARE THERAPEUTICS