



Health Science

The Health Science career cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development. This career cluster includes occupations ranging from medical assistant, registered nurse, and physical therapist to forensic science technician and athletic trainer.



Program of Study: Diagnostic & Therapeutic Services (KHS Pathways)

The Diagnostic and Therapeutic Services program of study focuses on occupational and educational opportunities associated with diagnosing and treating acute, episodic, or chronic illness independently or as part of a healthcare team. This program of study includes exploration of patient treatment and rehabilitative programs that help build or restore daily living skills to persons with disabilities or developmental delays.

Courses

| | Diagnostic Pathway | Therapeutic Pathway* |
|------------------------|---|---|
| 9 th Grade | Principles of Health Science | Principles of Health Science |
| 10 th Grade | Medical Terminology | Medical Terminology Pharmacy I |
| 11 th Grade | Health Science Theory Anatomy and Physiology | Health Science Theory Anatomy and Physiology |
| 12 th Grade | Practicum in Health Science | Pharmacology Practicum in Health Science |

* This Program of Study will end in 2025.

Aligned Advanced Academic Course(s)

- AP Biology
- AP Chemistry

Work-Based Learning/Expanded Learning Opportunities

| | |
|---------------------------------|--|
| Work-Based Learning Activities | <ul style="list-style-type: none"> • Earn industry certification • Intern with a medical assistant at a community clinic, hospital, assisted living, or long-term care facility • Participate in job shadowing experiences at hospital/clinical |
| Expanded Learning Opportunities | Health Occupation Students of America (HOSA) |

Aligned Industry-Based Certifications

- Certified EKG Technician OR Pharmacy Technician



Example Postsecondary Opportunities

Apprenticeships

- Medical Assistant

Associate Degrees

- Emergency Medical Technology
- Radiologic Technology/Science

Bachelor's Degrees

- Emergency Medical Technology
- Medical Insurance Coding

Master's, Doctoral, and Professional Degrees

- Medicine
- Occupational Therapy

Additional Stackable IBCs/License

- Registered Diagnostic Medical Sonographer

Example Aligned Occupations

Medical Assistants

Median Wage: \$36,834
Annual Openings: 11,638
10-Year Growth: 29%

Dental Hygienists

Median Wage: \$79,663
Annual Openings: 1,352
10-Year Growth: 32%

Physician Assistants

Median Wage: \$127,332
Annual Openings: 974
10-Year Growth: 41%

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

Approved Statewide Program of Study. C. E. King High School – 2024-25



Diagnostic and Therapeutic Services (KHS Options)

Course Information

Level 1

Principles of Health Science

13020200

Grade: 9-10

Credit: 1

The Principles of Health Science course is designed to provide an overview of the therapeutic, diagnostic, health informatics, support services, and biotechnology research and development systems of the health care industry. To pursue a career in the health science industry, students should learn to reason, think critically, make decisions, solve problems, and communicate effectively. Students should recognize that quality health care depends on the ability to work well with others.

Level 2

Medical Terminology

13020300

Grade: 10-12

Credit: 1

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

Pharmacy I

N1302127

Grade: 10-11

Credit: 1

Recommended Prerequisite: Principles of Health Science and Biology

In Pharmacy I students build on their existing foundation of knowledge and skills needed to pursue a career in the pharmaceutical field such as a pharmacy technician or pharmacist). Instruction includes pharmacokinetics, pharmacy law, medication safety, the dispensing process, and inventory.

Level 3

Health Science Theory

13020400

Grade: 10-12

Credit: 1

Prerequisite: Biology

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 employ hands-on experiences for continued knowledge and skill development.

Anatomy and Physiology (Satisfies a science credit)

13020600

Grade: 11-12

Credit: 1

GPA: 5.0

Prerequisite: 1 credit in Biology AND 1 credit in Chemistry, IPC, or Physics

In Anatomy and Physiology, students conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students in Anatomy and Physiology study a variety of topics, including the structure and function of the human body and the interaction of body systems for maintaining homeostasis.

Level 4

Pharmacology

13020950

Grade: 11-12

Credit: 1

Prerequisite: Biology and Chemistry

Recommended Prerequisite: 1 credit from Health Science cluster

The Pharmacology course is designed to study how natural and synthetic chemical agents such as drugs affect biological systems. Knowledge of the properties of therapeutic agents is vital in providing quality health care. It is an ever-changing, growing body of information that continually demands greater amounts of time and education from health care workers.

Practicum in Health Science

13020500

Grade: 12

Credit: 2

Prerequisite: Health Science Theory and Biology

The Practicum in Health Science course is designed to give students practical application of previously studied knowledge and skills in Health science. Practicum experiences offer a variety of opportunities to pursue a career in the health care industry. Students are expected to apply the knowledge and skills necessary to pursue a health science certification or licensure through further education and employment and are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

Industry Based Certifications: Certified EKG Technician OR Pharmacy Technician



Health Science

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Program of Study: Diagnostic & Therapeutic Services (Dual Credit Options)

The Diagnostic and Therapeutic Services program of study focuses on occupational and educational opportunities associated with diagnosing and treating acute, episodic, or chronic illness independently or as part of a healthcare team. This program of study includes exploration of patient treatment and rehabilitative programs that help build or restore daily living skills to persons with disabilities or developmental delays.

Courses

| | Medical Assisting | Pharmacy |
|------------------------------|---|--|
| 9th Grade | Principles of Health Science Business Information Management (BIM) I | Principles of Health Science Business Information Management (BIM) I |
| 10th Grade | Health Science Theory | Health Science Theory Pharmacy I |
| 11th Grade | Medical Terminology @ San Jacinto College Business English @ San Jacinto College Health Informatics @ San Jacinto College Anatomy and Physiology @ San Jacinto College | Anatomy and Physiology Medical Terminology @ San Jacinto College Pharmacy II @ San Jacinto College |
| 12th Grade | Pathophysiology @ San Jacinto College Practicum in Health Science @ San Jacinto College | Pharmacology @ San Jacinto College Mathematics for Medical Professionals @ San Jacinto College Practicum in Health Science @ San Jacinto College |



Example Postsecondary Opportunities

Apprenticeships

- Medical Assistant

Associate Degrees

- Emergency Medical Technology
- Radiologic Technology/Science

Bachelor's Degrees

- Emergency Medical Technology
- Medical Insurance Coding

Master's, Doctoral, and Professional Degrees

- Medicine
- Occupational Therapy

Additional Stackable IBCs/License

- Registered Diagnostic Medical Sonographer

Aligned Advanced Academic Course(s)

- AP Biology
- AP Chemistry

Work-Based Learning/Expanded Learning Opportunities

| | |
|--|---|
| Work-Based Learning Activities | <ul style="list-style-type: none"> • Intern with a medical assistant at a community clinic, hospital, assisted living, or long-term care facility • Participate in job shadowing experiences at hospital/clinical |
| Expanded Learning Opportunities | <ul style="list-style-type: none"> • Health Occupation Students of America (HOSA) • Earn dual credit hours |

Example Aligned Occupations

Medical Assistants

Median Wage: \$36,834
Annual Openings: 11,638
10-Year Growth: 29%

Dental Hygienists

Median Wage: \$79,663
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Approved Statewide Program of Study. C. E. King High School – 2024-25



Diagnostic and Therapeutic Services (Dual Credit Options)

Course Information

Level 1

Principles of Health Science

13020200

Grade: 9-10

Credit: 1

The Principles of Health Science course is designed to provide an overview of the therapeutic, diagnostic, health informatics, support services, and biotechnology research and development systems of the health care industry. To pursue a career in the health science industry, students should learn to reason, think critically, make decisions, solve problems, and communicate effectively. Students should recognize that quality health care depends on the ability to work well with others.

Business Information Management I (Required for Medical Assisting Pathway)

13011400

Grade: 9-12

Credit: 1

Recommended Prerequisite: Touch Systems and Data Entry

In Business Information Management I, students implement personal and interpersonal skills to strengthen individual performance in the workplace and in society and make a successful transition to the workforce and postsecondary education. Students apply technical skills to address business applications of emerging technologies, create word-processing documents, develop a spreadsheet, formulate a database, and make an electronic presentation using appropriate software.

Level 2

Medical Terminology

13020300

Grade: 10-12

Credit: 1

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

Note: Medical Assisting Pathway students will be taking this course at San Jacinto College.

Pharmacy I

N1302127

Grade: 10-11

Credit: 1

Recommended Prerequisite: Principles of Health Science and Biology

In Pharmacy I students build on their existing foundation of knowledge and skills needed to pursue a career in the pharmaceutical field such as a pharmacy technician or pharmacist). Instruction includes pharmacokinetics, pharmacy law, medication safety, the dispensing process, and inventory.

Level 3

Health Science Theory

13020400

Grade: 10-12

Credit: 1

Prerequisite: Biology

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 employ hands-on experiences for continued knowledge and skill development.

Note: Pharmacy Pathway students will be taking this course at San Jacinto College.

Health Informatics @ San Jacinto College

13020960

Grade: 11-12

Credit: 1

Prerequisite: Medical Terminology

The Health Informatics course is designed to provide knowledge of one of the fastest growing areas in both academic and professional fields. The large gap between state of the art computer technologies and the state of affairs in health care information technology has generated demand for information and health professionals who can effectively design, develop, and use technologies such as electronic medical records, patient monitoring systems, and digital libraries, while managing the vast amount of data generated by these systems.



Diagnostic and Therapeutic Services (Dual Credit Options)

Course Information

Level 3, Continued

Pharmacy II @ San Jacinto College

13021030

Grade: 11-12

Credit: 1

Prerequisite: Pharmacy I, Biology and Chemistry

The Pharmacy II course provides students with the advanced knowledge and skills to explore various careers in the pharmacy field, including pharmacology, pharmacy law, medication errors, inventory pharmacy calculations, compounding, and workflow expectations in a pharmacy setting. Pharmacy II is designed to be the third course in a pathway leading to college and career readiness in the healthcare therapeutics professions.

Anatomy and Physiology (Satisfies a science credit)

13020600

Grade: 11-12

Credit: 1

GPA: 5.0 (6.0 for San Jacinto College course)

Prerequisite: 1 credit in Biology AND 1 credit in Chemistry, IPC, or Physics

In Anatomy and Physiology, students conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students in Anatomy and Physiology study a variety of topics, including the structure and function of the human body and the interaction of body systems for maintaining homeostasis.

Note: Medical Assisting Pathway students will be taking this course at San Jacinto College.

Level 4

Business English @ San Jacinto College

13011600

Grade: 11-12

Credit: 1

Prerequisite: English III

In Business English, students enhance communication and research skills by applying them to the business environment, in addition to exchanging information and producing properly formatted business documents using emerging technology.

Pathophysiology @ San Jacinto College

13020800

Grade: 12

Credit: 1

Prerequisite: Biology and Chemistry

The Pathophysiology course is designed for students to conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students in Pathophysiology will study disease processes and how humans are affected. Emphasis is placed on prevention and treatment of disease. Students will differentiate between normal and abnormal physiology.

Pharmacology @ San Jacinto College

13020950

Grade: 11-12

Credit: 1

Prerequisite: Biology and Chemistry

Recommended Prerequisite: 1 credit from Health Science cluster

The Pharmacology course is designed to study how natural and synthetic chemical agents such as drugs affect biological systems. Knowledge of the properties of therapeutic agents is vital in providing quality health care. It is an ever-changing, growing body of information that continually demands greater amounts of time and education from health care workers.

Mathematics for Medical Professionals @ San Jacinto College

13020970

Grade: 12

Credit: 1

Prerequisite: Geometry and Algebra II

The Mathematics for Medical Professionals course is designed to serve as the driving force behind the Texas essential knowledge and skills for mathematics, guided by the college and career readiness standards. By embedding statistics, probability, and finance, while focusing on fluency and solid understanding in medical mathematics, students will extend and apply mathematical skills necessary for health science professions. Course content consists primarily of high school level mathematics concepts and their applications to health science professions.

Practicum in Health Science @ San Jacinto College

13020500

Grade: 12

Credit: 2

Prerequisite: Health Science Theory and Biology

The Practicum in Health Science course is designed to give students practical application of previously studied knowledge and skills in Health science. Practicum experiences offer a variety of opportunities to pursue a career in the health care industry. Students are expected to apply the knowledge and skills necessary to pursue a health science certification or licensure through further education and employment and are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.