

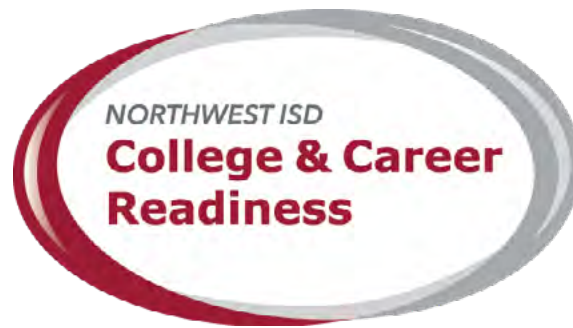
Career and Technical Education

# OPPORTUNITY GUIDE

***2021 - 2022***



***[nisdtx.org/cte](https://nisdtx.org/cte)***



## Northwest Independent School District CTE: Get Real.

At Northwest ISD CTE, we believe every student should get real: real academics, real skills, and a real high school experience unlike any other. By combining strong academics with robust career-minded education, we expand students' options and opportunities to make them truly future ready. Together with parents, business leaders, and the community, we challenge all students to aspire to their full potential, advance with rigorous academic and technical skills, and achieve a real-world competitive advantage.

**ASPIRE • ADVANCE • ACHIEVE**



# Career and Technical Education's Pathways to Opportunities:

## 7 ACADEMIES & 16 ADDITIONAL PROGRAMS OF STUDY

The ideal student for Academies is **ANY** student who has a strong interest and willingness to commit themselves to being immersed into four years of intense learning experiences, within unique industry standard facilities. Programs of Study and Academies allow experiences to occur for the RIGHT student, for the RIGHT reason, in the RIGHT program. The RIGHT student is motivated, dedicated, and in pursuit of their dreams.



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\*Available at all comprehensive high schools

# ACADEMY INFORMATION

## Who can request enrollment for an academy?

Incoming 9th grade students may request enrollment to any one of the district academies. Academies may admit 10th grade students who are new to NISD with facilitator approval or students who are already enrolled on the same campus as the academy they are requesting.

## What if I want to attend an academy that is not offered at my home campus?

You will have the opportunity to transfer to the campus of the academy for which you were accepted to participate in an academy. This will become your home campus.

## Will the district provide transportation if I want to transfer in order to participate in an academy?

Yes, bus transportation will be provided both to and from school at regular school hours. Transportation will not be provided for out of district transfer students.

## Locations



- Creative Media Production Academy
- STEM Academy



- Aviation and Aeronautics Academy
- Business Management and Entrepreneurship Academy



- Biomedical Sciences Academy
- Culinary Arts and Hospitality Academy



- Cosmetology Academy

# CAREER ICONS



## Career Awareness

### Learning ABOUT Work

Build awareness of the variety of careers available and the role of postsecondary education; broaden student options.



## Career Preparation

### Learning THROUGH Work

Apply learning through practical experience that develops knowledge and skills necessary for success in careers and postsecondary education.



## Career Exploration

### Learning ABOUT Work

Explore career options and postsecondary for the purpose of motivating students and to inform their decision making in high school and postsecondary education.



## Career Training

### Learning FOR Work

Train for employment and/or postsecondary education in a specific range of occupations.

A photograph of a vast agricultural field with rows of crops stretching towards the horizon. In the background, there are rolling hills under a sky with soft, pinkish clouds. The entire image is overlaid with a semi-transparent pink filter.

# **Agriculture, Food, and Natural Resources**

- Animal Science**
- Applied Agricultural Engineering**
- Plant Science**



# Animal Science

Enhance your passion working within diverse animal industries using preventative medicine, advanced therapeutic techniques, and injury treatment.

## RECOMMENDED COURSE SEQUENCE



### Principles of Agriculture, Food, and Natural Resources

In this introductory course, students will learn about the wonderful career opportunities available in Agriculture, through experiences in leadership development (FFA), plant science, animal industry, food technology, and agriculture mechanics. Students will have the opportunity to earn an OSHA 10 certification.



### Livestock Production

Livestock Production explores the health and nutrition, reproduction, and management of livestock and poultry. Students will develop skills to evaluate livestock, learn breeds, feed types and feeding techniques, breeding innovations and animal management. Live animals may be used in this course.



### Veterinary Medical Applications

Veterinary Medical Applications is a hands-on introduction to the concepts and skills related to the veterinary science industry while preparing students for a Veterinary Assistant Level 1 certification exam. Students develop competencies in the health, nutrition and safe handling of small and large animals, as well as the regulations for surgical preparations, vaccine predation and injection technique, and medical terminology in relation to the anatomy, physiology, and infectious diseases of animals. Live animals will be used in this class for skill development.



### Advanced Animal Science

Students will learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings. This course examines the correspondence of human, scientific, and technological aspects of animal science through field and laboratory experience. Students must meet the 40% laboratory and fieldwork requirement. This course satisfies a high school science graduation requirement and will be included in the calculation of the weighted GPA.

**OR**



### Practicum in Agriculture, Food, and Natural Resources (Internship)

This course is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experiences such as employment, independent study, internships, mentorships, or laboratories.

*\*See additional opportunities/courses in the NISD Academic Planning Guide.*

Check out our Agriculture, Food, and Natural Resources Pathways video on YouTube to learn more about Animal Science!



# Applied Agricultural Engineering

Create one-of-a-kind metal art designs from start to finish for a wide variety of customers using large scale machines.

## RECOMMENDED COURSE SEQUENCE



### Principles of Agriculture, Food, and Natural Resources

In this introductory course, students will learn about the wonderful career opportunities available in Agriculture, through experiences in leadership development (FFA), plant science, animal industry, food technology, and agriculture mechanics. Students will have the opportunity to earn an OSHA 10 certification.



### Agricultural Mechanics and Metal Technologies

This hands on laboratory based course curriculum, will prepare students for entry level skills needed for Applied Agriculture Engineering Career such as safety practices, tool operation, carpentry, welding, plumbing, concrete and electrical wiring. This course will work toward the skills needed for an AWS welding certification.



### Agricultural Equipment Design and Fabrication with Lab

This project based course in Agricultural Equipment Design and Fabrication, will help students develop knowledge and skills needed for a career in mechanized Agriculture. The students will take the skills learned in the Agriculture Mechanics and Metal Technology and design and fabricate projects in Agricultural Equipment. The course offers an opportunity to earn an AWS Welding and OSHA 30 certifications.

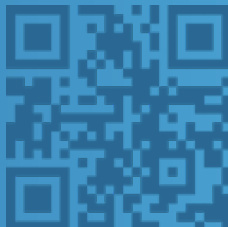


### Practicum in Agriculture, Food, and Natural Resources (Internship)

This course is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experiences such as employment, independent study, internships, mentorships, or laboratories.

*\*See additional opportunities/courses in the NISD Academic Planning Guide.*

Check out our Agriculture, Food, and Natural Resources Pathways video on YouTube to learn more about Applied Agricultural Engineering!





# Plant Science

Create innovative art using flowers imported from around the world.

## RECOMMENDED COURSE SEQUENCE



### Principles of Agriculture, Food, and Natural Resources

In this introductory course, students will learn about the wonderful career opportunities available in Agriculture, through experiences in leadership development (FFA), plant science, animal industry, food technology, and agriculture mechanics. Students will have the opportunity to earn an OSHA 10 certification.



### Horticulture Science

This hands-on course prepares students to produce, process, and market horticulture plants used primarily for ornamental, recreational, and aesthetic purposes.



### Floral Design I

This course is designed to develop students' ability to identify and demonstrate the principles and techniques related to floral design as well as develop an understanding of the management of floral enterprises. This course satisfies the graduation requirement for Fine Arts. This course will equip students to take the Level 1 Texas State Floral Association Student Floral Certification.



### Advanced Floral Design

In this course, students build on the knowledge and skills learned in Floral 1 and are introduced to more advanced floral design concepts, with an emphasis on specialty designs and specific occasion planning. Students will have the opportunity to work within a functioning school floral design studio. Students will be trained and prepared for a Texas Floral Association Student Level 2 Certification.

**AND/OR**



### Practicum in Agriculture, Food, and Natural Resources (Internship)

This course is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experiences such as employment, independent study, internships, mentorships, or laboratories.

*\*See additional opportunities/courses in the NISD Academic Planning Guide.*

Check out our Agriculture, Food, and Natural Resources Pathways video on YouTube to learn more about Plant Science!



# Architecture and Construction

- Architectural Design



# Architectural Design

Visualize, design, and construct 3D models and generate a wide range of full-color prototypes, prints, and 3D computer-aided drawings.

## RECOMMENDED COURSE SEQUENCE (ARCHITECTURAL DESIGN)

### Principles of Architecture



This course provides an overview to the various fields of architecture, interior design, and construction management. Students will develop professional skills, investigate career opportunities and the skills necessary to work in this industry. Course studies will include project- planning, hand-drawing, reading plans, identifying appropriate materials, creating models and portfolio development. Students will earn the OSHA 10- hour certification, Microsoft Word and PowerPoint Certifications.



### Architectural Design I



This course focuses on the knowledge and skills needed to enter a career in architecture or construction. Students will learn about design, design history, techniques and tools related to both residential and nonresidential buildings. Professional skills including communication and time management will be key parts of Architectural Design I. Course products will include drawings, renderings, site plans, elevations, scale models and a professional portfolio. The first semester will focus on hand-drawing while the second semester will utilize AutoDesk AutoCAD software. Students will earn their Microsoft Excel certification and prepare for the AutoCAD certification.



### Computer Aided Drafting for Architecture



This course focuses on learning industry standard drafting skills through AutoDesk Revit. Course studies include setting up a CAD workstation and working with software ribbons to increase design skills. Students will increase their depth of knowledge in the software and gain the skills of a drafter. Students will work on large scale design projects using Gantt Charts, bubble diagrams and more to simulate the professional work of an architect. CAD students will earn certification in Revit, Microsoft Word Expert and may certify in AutoCAD.



### Architectural Design II



This advanced course will build on previous knowledge and immerse students in a workplace environment. Course studies will include working with clients, interpreting and evaluating design decisions, working on large scale CAD projects with design plans, models and presentations. Students will demonstrate professional and employability skills, such as communication skills, teamwork, work habits and maintain a professional portfolio. This course will embed sustainable design and LEED certification with a focus in architectural design. Students will earn their LEED certification in addition to Microsoft Excel Expert and Microsoft PowerPoint Expert.

*\*See additional opportunities/courses in the NISD Academic Planning Guide.*

**RECOMMENDED COURSE SEQUENCE (INTERIOR DESIGN)****Principles of Architecture**

This course provides an overview to the various fields of architecture, interior design, and construction management. Students will develop professional skills, investigate career opportunities and the skills necessary to work in this industry. Course studies will include project- planning, hand-drawing, reading plans, identifying appropriate materials, creating models and portfolio development. Students will earn the OSHA 10- hour certification, Microsoft Word and PowerPoint Certifications.

**Interior Design I**

Students will use knowledge and skills related to exterior and interior environments, construction, and furnishings to increase productivity, promote sustainability and compete in industry. Professional skills and employability skills, including communication and decision- making will be key parts of Interior Design I. Course studies will include principles of design and principles of space utilization for both residential and nonresidential spaces, materials presentation boards and a professional portfolio. Students will choose appropriate flooring, lighting, furniture and finishes that meet the needs of the design brief and budget. The first semester will focus on hand- drawing while the second semester will utilize AutoDesk AutoCAD software.

**Computer Aided Drafting for Architecture**

This course focuses on learning industry standard drafting skills through AutoDesk Revit. Course studies include setting up a CAD workstation and working with software ribbons to increase design skills. Students will increase their depth of knowledge in the software and gain the skills of a drafter. Students will work on large scale design projects using Gantt Charts, bubble diagrams and more to simulate the professional work of an architect. CAD students will earn certification in Revit, Microsoft Word Expert and may certify in AutoCAD.

**Interior Design II**

This advanced laboratory course includes the application of employability characteristics, principles, technologies, tools and materials related to interior design careers. Course studies will include working with clients, interpreting and evaluating design decisions, working on large scale CAD projects with design plans, materials boards and presentations. Students will demonstrate professional and employability skills, such as communication skills, teamwork, work habits and maintain a professional portfolio. This course will embed sustainable design and LEED certification with a focus in interior design.

*\*See additional opportunities/courses in the NISD Academic Planning Guide.*



# **Arts, Audio/ Video Technology & Communications**

- **Creative Media Production Academy**
- **Design and Multimedia Arts**
- **Digital Communications**



# Creative Media Production Academy

(Located at Northwest High School)

## COURSE SEQUENCES

Students in this academy can take any course in the academy as long as they have met the prerequisite for the course. For example, students must take a career exploration course before taking the corresponding career preparation course.



### Principles of Arts, Audio/ Video Technology, and Communications

#### Audio/Video Production Track

#### Commercial Photography Track

#### Graphic Design and Illustration Track



#### Audio/ Video Production I

#### Commercial Photography I

#### Graphic Design and Illustration I



#### Audio/ Video Production II (NHSTV)

#### Commercial Photography II

#### Graphic Design and Illustration II



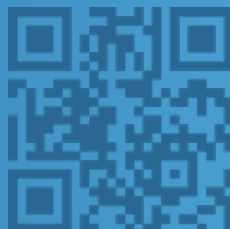
#### Practicum in Audio/Video Production (NHSTV)

#### Printing and Imaging Technology I (Yearbook)

#### Practicum in Graphic Design and Illustration

*\*See additional opportunities/courses in the NISD Academic Planning Guide.*

Check out our Creative Media Production Academy video on YouTube to learn more about the academy!





# Design and Multimedia Arts

Create vibrant illustrations, animations, drawings, logos, ads, and traditional art for dynamic visual media.

## RECOMMENDED COURSE SEQUENCE



### Principles of Arts, Audio/Video Technology, and Communications

This course includes an introduction to audio and video production, graphic design and illustration, and principals of animation. Adobe Creative Cloud Applications, such as Photoshop, Illustrator, Premiere, and Flash will be used in the course. Students at Northwest High School can apply to the Creative Media Production Academy after taking this course their 9th or 10th grade year.



### Graphic Design and Illustration I

In this course, students will learn the basics of Adobe Illustrator and Adobe Photoshop. Students will be expected to work together and by themselves on several projects that will teach them the basic principles of design, advertising and marketing. Students will learn about color, composition, drawing, texture, photo editing and typography.



### Commercial Photography I

This course provides students with the foundations for success in a photography career. Here, students will learn the basics of camera operation, including utilizing the exposure triangle via creative and manual camera modes, basic photo composition, and concepts for successful photography in multiple genres. They will explore lighting techniques both in the studio and in natural light settings, and how to make better use of available light. Students will also learn basic retouching and editing via Photoshop and Lightroom. With an exploration into photography history, copyright, and basic business practices, they will garner a knowledge of photography beyond simply effective image capture.



### Career Preparation I

This course provides opportunities for students to participate in a work-based learning experience that combines classroom instruction with business and industry employment experiences. The goal is to prepare students with a variety of skills for a changing workplace. Career preparation is relevant and rigorous, supports student attainment of academic standards, and effectively prepares students for college and career success.

*\*See additional opportunities/courses in the NISD Academic Planning Guide.*

Check out our Arts, Audio/Video Technology, and Communications Pathways video on YouTube to learn more about Design and Multimedia Arts!



# Digital Communications

Gain job-specific training for entry level employment in audio, video, television, and film.

## RECOMMENDED COURSE SEQUENCE



### Principles of Arts, Audio/Video Technology, and Communications

This course includes an introduction to audio and video production, graphic design and illustration, and principals of animation. Adobe Creative Cloud Applications, such as Photoshop, Illustrator, Premiere, and Flash will be used in the course. Students at Northwest High School can apply to the Creative Media Production Academy after taking this course their 9th or 10th grade year.



### Audio/Video Production I

In this course you will work for BobcatTV (BNHS) or EGLTV (EHS) for video announcements. This course will explore the Audio and Video production industry and its postsecondary educational and career opportunities. Students will gain job-specific training for entry level employment in audio, video, television, and film. Professional equipment and Adobe Creative Cloud software will be used in the creation of student productions. Students will be involved in every aspect of several class and small group audio, video, and film style production projects with emphasis on live multi-camera video and film style production projects.



### Audio/Video Production II

This course is for students who want to take a second year of BobcatTV (BNHS) or EGLTV (EHS). Students in this course will work as employees for the television station. Students will produce a live TV show each and every day in our state of the art HD television production facility. Students will work as reporters, anchors, producers and crew members. Students will work on several audio and/or video productions created for television, cable television, education, radio, entertainment, business and/or industry.



### Career Preparation I

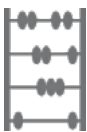
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*\*See additional opportunities/courses in the NISD Academic Planning Guide.*



# **Business, Marketing, and Finance**

- Accounting and Financial Services**
- Business Management and Entrepreneurship Academy**
- Business Management**



# Accounting and Financial Services

Discover how to manage personal wealth and financial stability for business. Investigate financial principles, systems, and processes for business operations and personal financial responsibility.

## RECOMMENDED COURSE SEQUENCE



### Principles of Business, Marketing, and Finance

In this course students explore basic business operations for the sale of goods and services, advertising strategies businesses use, and financial management for business.



### Accounting I

Students investigate the field of accounting, and the processes of recording, reporting, and disclosing financial information for a business. Students formulate and interpret financial information for use in management decision making.



### Financial Mathematics

Students apply critical thinking skills to analyze personal financial decisions based on current and projected economic factors. Students learn life math such as stocks, taxes, loans, credit cards and financial literacy.



### Practicum in Business Management (Internship)

Practicum in Business Management is designed to give students supervised practical application of previously studied knowledge and skills in. Practicum students apply business technical skills they have learned in a work-place environment. Students are placed in a variety of locations appropriate to the nature and level of student experience.

**OR**



### Career Preparation I

This course provides opportunities for students to participate in a work-based learning experience that combines classroom instruction with business and industry employment experiences. The goal is to prepare students with a variety of skills for a changing workplace. Career preparation is relevant and rigorous, supports student attainment of academic standards, and effectively prepares students for college and career success.

*\*See additional opportunities/courses in the NISD Academic Planning Guide.*



# Business Management and Entrepreneurship Academy

Build a business as part of the next generation of socially responsible entrepreneurs and global business leaders seeking and finding innovative solutions to today's challenges.

(Located at V.R. Eaton High School)

## RECOMMENDED COURSE SEQUENCE



### BME Fundamentals

In this unique hands-on business startup experience, students are challenged to solve a problem or fill in a need in their community and have the opportunity to experience the thrill of launching and operating a business. Students explore the sale of goods and services, advertising and marketing strategies businesses implement, and financial management for a business. Students begin industry-recognized certification training in Microsoft Office and additional industry recognized certifications.



### BME Operations I

The opportunity in this course focuses on virtual (e-commerce) business development and establishing a web presence. Students continue their pursuit of Microsoft Office and additional industry recognized certifications.

**AND**



### BME Operations II

Students learn the skills to become effective social media marketers by simulating social media activities for a business. Students explore current social media platforms and develop social marketing strategies and plans.



### BME Innovation

The primary focus of the course is to help students understand the process of analyzing business opportunities, determining feasibility of an idea using research, and developing a business plan from startup company to exit strategy. Students explore case studies in global business to learn about strategies for success in business.



### BME Capstone

Student teams develop a business plan for a virtual start-up business and participate in marketing and selling their product in the Virtual Enterprises International virtual economy. In this student led and operated virtual business, students assume specific job roles and responsibilities for "their VEI firm." Students incorporate a broad base of knowledge that includes the legal, managerial, marketing, financial, ethical, and international dimensions of business to make appropriate business decisions.

*\*See additional opportunities/courses in the NISD Academic Planning Guide.*

Check out our Business Management and Entrepreneurship Academy video on YouTube to learn more about the academy!



# Business Management

Develop foundational business knowledge, industry recognized skills, and the explore the responsibilities and rewards of being a manager for an organization.

## RECOMMENDED COURSE SEQUENCE 1



### Principles of Business, Marketing, and Finance

In this course students explore basic business operations for the sale of goods and services, advertising strategies businesses use, and financial management for business.



### Business Management

This course is designed to familiarize students with the concepts related to business management as well as the functions of management including, planning, organizing, staffing, leading, and controlling. Students also demonstrate communication and interpersonal skills to accomplish management objectives.



### Business Law

Students will analyze various aspects of the legal environment of business including ethics, the judicial system, contracts, patents, trademarks, personal property, sales, agency and employment, business organization, real property, and business risk management.

OR



### Business Information Management I

Students develop technical skills creating word-processing documents, spreadsheets, creating presentations, and using email client/personal information manager using Microsoft Office software. Students will be expected to complete Microsoft Certification exams throughout the course.



### Practicum in Business Management (Internship)

Practicum in Business Management is designed to give students supervised practical application of previously studied knowledge and skills in. Practicum students apply business technical skills they have learned in a work-place environment. Students are placed in a variety of locations appropriate to the nature and level of student experience.

*\*See additional opportunities/courses in the NISD Academic Planning Guide.*

**RECOMMENDED COURSE SEQUENCE 2****Principles of Business, Marketing, and Finance**

In this course students explore basic business operations for the sale of goods and services, advertising strategies businesses use, and financial management for business.

**Business Information Management I**

Students develop technical skills creating word-processing documents, spreadsheets, creating presentations, and using email client/personal information manager using Microsoft Office software. Students will be expected to complete Microsoft Certification exams throughout the course.

**Business Information Management II**

Students apply technical skills to address business applications of emerging technologies, create complex word-processing documents, develop sophisticated spreadsheets using charts and graphs, and produce advanced electronic presentations using appropriate multimedia software. Students will be expected to complete advanced Microsoft Certification exams throughout this course.

**Business Management**

This course is designed to familiarize students with the concepts related to business management as well as the functions of management including, planning, organizing, staffing, leading, and controlling. Students also demonstrate communication and interpersonal skills to accomplish management objectives.

**OR****Practicum in Business Management (Internship)**

Practicum in Business Management is designed to give students supervised practical application of previously studied knowledge and skills in. Practicum students apply business technical skills they have learned in a work-place environment. Students are placed in a variety of locations appropriate to the nature and level of student experience.

**OR****Career Preparation I**

This course provides opportunities for students to participate in a work-based learning experience that combines classroom instruction with business and industry employment experiences. The goal is to prepare students with a variety of skills for a changing workplace. Career preparation is relevant and rigorous, supports student attainment of academic standards, and effectively prepares students for college and career success.

Check out our Business, Marketing, and Finance Pathways video on YouTube to learn more about Business Management!



# Education and Training

- Early Learning
- Teaching and Training



# Early Learning

Explore the fascinating world of working with children age four and younger.

## RECOMMENDED COURSE SEQUENCE



### Principles of Human Services

Principles of Human Services uses knowledge and skills in family studies and human development to enhance personal development, foster quality relationships, promote wellness of family members, and manage multiple adult roles. This course introduces students to careers in counseling and mental health, child development, family and community, personal care services and consumer services.



### Child Development

This course examines the development of children focusing on common physical, cognitive, emotional, and social developmental milestones from conception through adolescence. Students participate in a Reality Works Baby Simulator project, prepare nutritious kid-friendly snacks, investigate careers that work with children and have the opportunity to certify in infant, child and adult CPR.



### Child Guidance (Internship)

This course is an internship course that addresses the knowledge and skills related to child growth and guidance. Students use these skills to promote the well-being and healthy development of children, strengthen a culturally diverse society, and pursue careers related to the care, guidance, and education of children, including those with special needs.



### Practicum in Human Services (Internship)

Practicum provides a unique experience that allows students the opportunity to participate in a learning environment that combines classroom instruction with real business and industry career experiences through an internship. Students will gain academic and career preparation to pursue high demand and high skill careers.

*\*See additional opportunities/courses in the NISD Academic Planning Guide.*



# Teaching and Training

Teach and coach side-by-side with professional educators in a variety of school settings.

**Upon completion of this program, students will earn their Educational Aide I Certification and a Northwest ISD Priority Interview Certificate.**

## RECOMMENDED COURSE SEQUENCE



### Principles of Education and Training

This course covers a variety of topics including learning processes, education theory, classroom management, child development and lesson planning. Students will research careers and topics in education including teacher training, interview processes and ethics in the workplace. Students will experience field-based teaching observation opportunities and create a portfolio that will serve as a foundation for future education courses.



### Child Development

This course examines the development of children focusing on common physical, cognitive, emotional, and social developmental milestones from conception through adolescence. Students participate in a Reality Works Baby Simulator project, prepare nutritious kid-friendly snacks, investigate careers that work with children and have the opportunity to certify in infant, child and adult CPR.



### Instructional Practices (Internship)

This course is a field-based internship in which students work under the joint direction of their course instructor and a mentor teacher on an NISD Elementary, Middle or High School campus. Students learn to plan and direct instruction, develop materials for educational environments, assist with record keeping, and complete other responsibilities of teachers, trainers, paraprofessionals, and other educational personnel.



### Practicum in Education and Training (Internship)

This course is an advanced field-based internship in which students work under the joint direction of their course instructor and a mentor teacher on an NISD Elementary, Middle or High School campus. Students learn to prepare and implement individualized instruction and group activities, prepare instructional materials, and complete other responsibilities of classroom teachers, trainers, paraprofessionals, and other educational personnel.

*\*See additional opportunities/courses in the NISD Academic Planning Guide.*

Check out our Teaching and Training video on YouTube  
to learn more about the pathway!

A human skeleton is shown from the chest up, facing slightly to the right. It is covered with various medical sensors, wires, and electrodes, suggesting a focus on biomedical research or healthcare technology. The background is a solid, deep red color. The text 'Health Science' is overlaid on the left side of the image in a large, white, sans-serif font.

# Health Science

- Healthcare Diagnostics
- Healthcare Therapeutic



# Healthcare Diagnostics

The Healthcare Diagnostics 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.

**Students will earn their Emergency Medical Technician (EMT) certification.**

## RECOMMENDED COURSE SEQUENCE



### Principles of Health Science

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 healthcare industry. Course content includes interpersonal relationships, anatomy and physiology, ethical/legal responsibilities, health care team concept, medical terminology, basic medical emergency practices, and investigation of various health service related careers.



### Health Science Theory

This course will foster hands-on exploration through 15 two week modules using Paxton Patterson curriculum which will provide students the opportunity to increase their awareness of the various healthcare careers and skills needed to successfully prepare for the healthcare industry and work toward industry certifications in the future practicum courses.



### Anatomy and Physiology

Anatomy and Physiology is designed for students interested in biological, medical, and health oriented programs. Students will study the structures and functions of the human body. The body's systems will be investigated as to the body's responses to forces, maintenance of homeostasis, electrical interactions, transport systems, and energy systems. The topics will be presented through an integration of biology, chemistry, and physics. In this laboratory course, the students conduct laboratory investigations, perform dissections, use scientific methods during investigations, and make informed decisions using critical thinking and problem solving.



### Practicum in Health Science (Emergency Medical Technician) (Internship)

This course is designed to give students practical application of previously studied knowledge and skills in order to become an industry certified EMT. Practicum experiences can occur in a variety of clinical locations appropriate to the nature and level of experience. An examination for Emergency Medical Technician is required at the end of the course.

*\*See additional opportunities/courses in the NISD Academic Planning Guide.*

Check out our Health Science Pathways video on YouTube  
to learn more about Healthcare Diagnostics!



# Healthcare Therapeutic

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.

**Students will earn their Certified Medical Assistant (CMA) certification.**

## RECOMMENDED COURSE SEQUENCE



### Principles of Health Science

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 healthcare industry. Course content includes interpersonal relationships, anatomy and physiology, ethical/legal responsibilities, health care team concept, medical terminology, basic medical emergency practices, and investigation of various health service related careers.



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This course will foster hands-on exploration through 15 two week modules using Paxton Patterson curriculum which will provide students the opportunity to increase their awareness of the various healthcare careers and skills needed to successfully prepare for the healthcare industry and work toward industry certifications in the future practicum courses.



### Anatomy and Physiology

Anatomy and Physiology is designed for students interested in biological, medical, and health oriented programs. Students will study the structures and functions of the human body. The body's systems will be investigated as to the body's responses to forces, maintenance of homeostasis, electrical interactions, transport systems, and energy systems. The topics will be presented through an integration of biology, chemistry, and physics. In this laboratory course, the students conduct laboratory investigations, perform dissections, use scientific methods during investigations, and make informed decisions using critical thinking and problem solving.



### Practicum in Health Science (Certified Medical Assistant) (Internship)

Practicum in Health Science is a course designed to give students practical application of previously studied knowledge and skills. Practicum provides a unique experience that allows students the opportunity to participate in a learning environment that combines classroom instruction with real business and industry career experiences in a professional medical setting. There is an emphasis on phlebotomy, CPR, vital signs, and nursing skills. An examination for CMA is required at the end of the course.

*\*See additional opportunities/courses in the NISD Academic Planning Guide.*

Check out our Health Science Pathways video on YouTube  
to learn more about Healthcare Therapeutic!



# **Hospitality and Tourism**

**- Culinary Arts and Hospitality Academy**



# Culinary Arts and Hospitality Academy

Craft innovative dishes alongside professional chefs using advanced industry equipment.

(Located at Byron Nelson High School)

## RECOMMENDED COURSE SEQUENCE



### Principles of Hospitality & Tourism

Students learn knowledge and skills focusing on communication, time management, and customer service that meet industry standards. Students will explore the history of the hospitality and tourism industry and examine characteristics needed for success in that industry.



### Introduction to Culinary Arts

Students will develop an understanding of the operation of a well-run restaurant. Introduction to Culinary Arts will provide insight into food production skills, various levels of industry management, and hospitality skills. This is an entry level course for students interested in pursuing a career in the food service industry. This course is offered as a classroom and laboratory-based course.



### Culinary Arts

Students learn the fundamentals and principles of the art of cooking and the science of baking and includes management and production skills and techniques. Students can pursue a national sanitation certification or other appropriate industry certifications. This course is offered as a laboratory-based course.

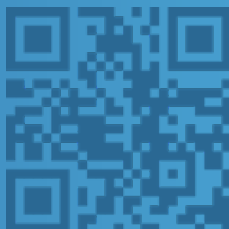


### Practicum in Culinary Arts/ Extended Practicum in Culinary Arts (Internship)

Integration of academic and career and technical education; provides more interdisciplinary instruction; and supports strong partnerships among schools, businesses, and community institutions with the goal of preparing students with a variety of skills in a fast-changing workplace. Students will have the opportunity to work in the Byron Bistro.

*\*See additional opportunities/courses in the NISD Academic Planning Guide.*

Check out our Culinary Arts and Hospitality Academy video on YouTube to learn more about the academy!



A person is sitting on a wooden dock that extends into a calm lake. In the background, there are large, rugged mountains. The entire image has a red color overlay.

# Human Services

- Cosmetology Academy
- Family and Community Services



# Cosmetology Academy

Operate and experience a full-service interactive salon and spa environment.

**(Located at Steele Accelerated High School)**

\*Students from NHS, BNHS, and EHS can now complete their Cosmetology license at Steele during their junior and senior years! Interested students may request enrollment during their sophomore year to attend the Cosmetology Academy for part of their school day when they are juniors and seniors. Students will remain enrolled at their home campus to take their core classes and take the cosmetology courses at Steele. Transportation to and from Steele will be available.

## RECOMMENDED COURSE SEQUENCE

**No 9th Grade course offered in 21-22.**



### Principles of Cosmetology Design and Color Theory

Students will attain academic skills and knowledge as well as technical knowledge and skills related to cosmetology design and color theory. Students will develop knowledge and skills regarding various cosmetology design elements such as form, lines, texture, structure and illusion or depth as they relate to the art of cosmetology. Instruction includes sterilization and sanitation procedures, hair care, nail care, and skin care and meets the TDLR requirements for licensure upon passing the state examination. Students may begin to earn Texas Department of Licensing and Regulation (TDLR) hours toward a Cosmetology Operator License.



### Cosmetology I

Students will coordinate integration of academic, career, and technical knowledge and skills in this laboratory instructional sequence course designed to provide job-specific training for employment in cosmetology careers. Instruction includes sterilization and sanitation procedures, hair care, nail care, and skin care and meets the Texas Department of Licensing and Regulation (TDLR) requirements for licensure upon passing the state examination. Analysis of career opportunities, license requirements, knowledge and skills expectations, and development of workplace skills are included.



### Cosmetology II

Students will demonstrate proficiency in academic, technical, and practical knowledge and skills. The content is designed to provide the occupational skills required for licensure. Instruction includes advanced training in professional standards/employability skills; Texas Department of Licensing and Regulation (TDLR) rules and regulations; use of tools, equipment, technologies and materials; and practical skills.

*\*See additional opportunities/courses in the NISD Academic Planning Guide.*

**Check out our Health Science Pathways video on YouTube  
to learn more about Healthcare Therapeutic!**



# Family and Community Services

Investigate complex social and emotional challenges to understand their effects on individuals, communities, and society.

## RECOMMENDED COURSE SEQUENCE



### Principles of Human Services

Principles of Human Services uses knowledge and skills in family studies and human development to enhance personal development, foster quality relationships, promote wellness of family members, and manage multiple adult roles. This course introduces students to careers in counseling and mental health, child development, family and community, personal care services and consumer services.



### Family and Community Services

Family and Community Services is a laboratory course that prepares students for employment in counseling and mental health, family and community services, personal care, and consumer services. Students will plan, develop, implement, and evaluate community and service-learning activities that benefit individuals, families, or the community. Emphasis is placed on developing organizational and leadership skills.



### Counseling and Mental Health

Counseling and mental health investigates careers in counseling, mental health and social work. This class explores material in counseling and mental health as it relates to health & wellness across the life span. Students will study the psychological effects of chemical dependency, mental health issues and apply knowledge of ethical and legal responsibilities for counseling and mental health professionals.



### Practicum in Human Services (Internship)

Practicum provides a unique experience that allows students the opportunity to participate in a learning environment that combines classroom instruction with real business and industry career experiences through an internship. Students will gain academic and career preparation to pursue high demand and high skill careers.

*\*See additional opportunities/courses in the NISD Academic Planning Guide.*



# **Manufacturing**

**- Advanced Manufacturing and  
Machinery Mechanics**



# Advanced Manufacturing and Machinery Mechanics

(Pre-Engineering)

Partner with structural, mechanical, electrical, and industrial engineering firms to gain real-world experience.

## RECOMMENDED COURSE SEQUENCE



### Blueprint Reading for Manufacturing

This course is an introduction to reading and interpreting working drawings for fabrication processes and associated trades. Students will learn sketching techniques to create multi-view drawings and interpret blueprint drawings including dimensions, notes, symbols, sections and auxiliary views. Professional employability skills like teamwork, communication, safety and portfolios will be a key element in this course. Certifications will be earned in OSHA (10-hr) and Microsoft Word.



**This program is being developed.**

**New courses will be available in 2022-2023.\***



**This program is being developed.**


**New courses will be available in 2022-2023.\***



**This program is being developed.**

**New courses will be available in 2022-2023.\***

*\*New courses will cover topics like Automation Programming, Design Process and Idea Generation, 3D Computer Aided Design Assemblies, CNC Machine Applications, Cyber Security and more!*



# **Information Technology**

**- Networking Systems**



# Networking Systems

Design, install, and troubleshoot complex network systems.

## RECOMMENDED COURSE SEQUENCE



### Principles of Information Technology

In this course, students will develop computer literacy skills, enhance reading, writing, communication and reasoning skills and apply them to the information technology environment using TestOut Curriculum. Students demonstrate knowledge of both software & hardware systems within IT and gain employability and professional skills. Coursework includes word processing, spreadsheets, programming languages, databases, presentations, web design and portfolio development. Students will investigate the legal and ethical practices as they relate to IT.



### Computer Maintenance

Students will apply technical skills to address the IT industry and emerging technologies using TestOut Curriculum. The course will include knowledge of computer maintenance, hardware design & operation, operating systems, installation of software, evaluation of software applications and configuration of network systems. Students will work through IT maintenance simulations to troubleshoot computer software and hardware problems to diagnose issues.



### Networking

Students will develop knowledge and skills related to data networking technologies and practices to apply them in personal or career development using TestOut Curriculum. Course studies will include professional skills such as communication and problem solving as well as working with a customer. Students will be able to analyze telecommunications and data network services to address industry needs. Course work will include creating a network design plan with appropriate documentation and a preventative maintenance plan.



### Practicum in Information Technology (Internship)

Professional skills, like critical thinking and problem solving, combined with IT experience and knowledge will be a key part of this course. The course could include an on-campus internship, off-campus internship or mentorship with an industry professional. Students will work with their mentor to identify a problem in the IT field, conduct research, create a solution, develop a strategy to address the problem, then design a product or service that solves the problem. A project portfolio will be presented to a panel of professionals using formal presentation skills. Students will also continue to develop a professional portfolio showcasing their accomplishments, knowledge and skills, certifications and artifacts.


**OR**



### Independent Study in Technology Applications

In Independent Study in Technology Applications, students will work in a simulated work environment in the field of IT to complete large scale projects designed by the teacher and mentor. Students will identify a problem in IT and work to research, create solutions and design a product or service that solves the problem. The final presentation will include a project portfolio presented to a panel of professionals using formal presentation skills.

*\*See additional opportunities/courses in the NISD Academic Planning Guide.*



# Science, Technology, Engineering, and Mathematics

- Biomedical Sciences Academy
- Programming and Software Development
- STEM Academy



# Biomedical Sciences Academy

The Biomedical Sciences 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.

(Located at Byron Nelson High School)

## RECOMMENDED COURSE SEQUENCE



### PLTW Principles of Biomedical Sciences

Principles of Biomedical Sciences is an exciting and rigorous course where students explore concepts of biology and medicine as they take on roles of different medical professionals to solve real-world problems. Over the course of the year, students are challenged in various scenarios including investigating a crime scene to solve a mystery, diagnosing and proposing treatment to patients in a family medical practice, to tracking down and containing a medical outbreak at a local hospital, stabilizing a patient during an emergency, and collaborating with others to design solutions to local and global medical problems.



### PLTW Human Body Systems

Students examine the interactions of human body systems as they explore identity, power, movement, protection, and homeostasis. Exploring science in action, students build organs and tissues on a skeletal Maniken®; use data acquisition software to monitor body functions such as muscle movement, reflex and voluntary action, and respiration; and take on the roles of biomedical professionals to solve real-world medical cases.



### PLTW Medical Interventions

Students follow the life of a fictitious family as they investigate how to prevent, diagnose, and treat disease. Students explore how to detect and fight infection; screen and evaluate the code in human DNA; evaluate cancer treatment options; and prevail when the organs of the body begin to fail. Through real-world cases, students are exposed to a range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics.



### PLTW Biomedical Innovation

In the final course of the Project Lead the Way Biomedical Science sequence, students build on the knowledge and skills gained from previous courses to design innovative solutions for the most pressing health challenges of the 21st century. Students address topics ranging from public health and biomedical engineering to clinical medicine and physiology. They have the opportunity to work on an independent design project with a mentor or advisor from a university, medical facility, or research institution.

*\*See additional opportunities/courses in the NISD Academic Planning Guide.*



# Programming and Software Development

Work individually and in teams to develop and engineer the code that powers the modern world.

## RECOMMENDED COURSE SEQUENCE



### Computer Science I

This course will foster students' creativity and innovation by presenting opportunities to design, implement, and present meaningful programs through a variety of media. Students will understand Computer Science through the study of technology operations, systems and concepts using TechSmart Curriculum. Course studies include the coding language Python, analyzing and designing algorithms, and demonstrating proficiency in digital citizenship. Professional skills, like collaboration and communication, portfolio building are key elements.



### Computer Science II

This course includes exploration into creating, modifying, and testing the codes, forms and scripts that allow computer applications to run. Students will use the programming language Python and TechSmart Curriculum to work both individually and collaboratively to solve problems. Course studies will include locating, analyzing, processing and organizing data, comparing operating systems, software applications, hardware platforms and programming languages.



**This course will be available in 2022-2023.**



### Practicum in Information Technology (Internship)

Professional skills, like critical thinking and problem solving, combined with IT experience and knowledge will be a key part of this course. The course could include an on-campus internship, off-campus internship or mentorship with an industry professional. Students will work with their mentor to identify a problem in the IT field, conduct research, create a solution, develop a strategy to address the problem, then design a product or service that solves the problem. A project portfolio will be presented to a panel of professionals using formal presentation skills. Students will also continue to develop a professional portfolio showcasing their accomplishments, knowledge and skills, certifications and artifacts.

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*\*See additional opportunities/courses in the NISD Academic Planning Guide.*

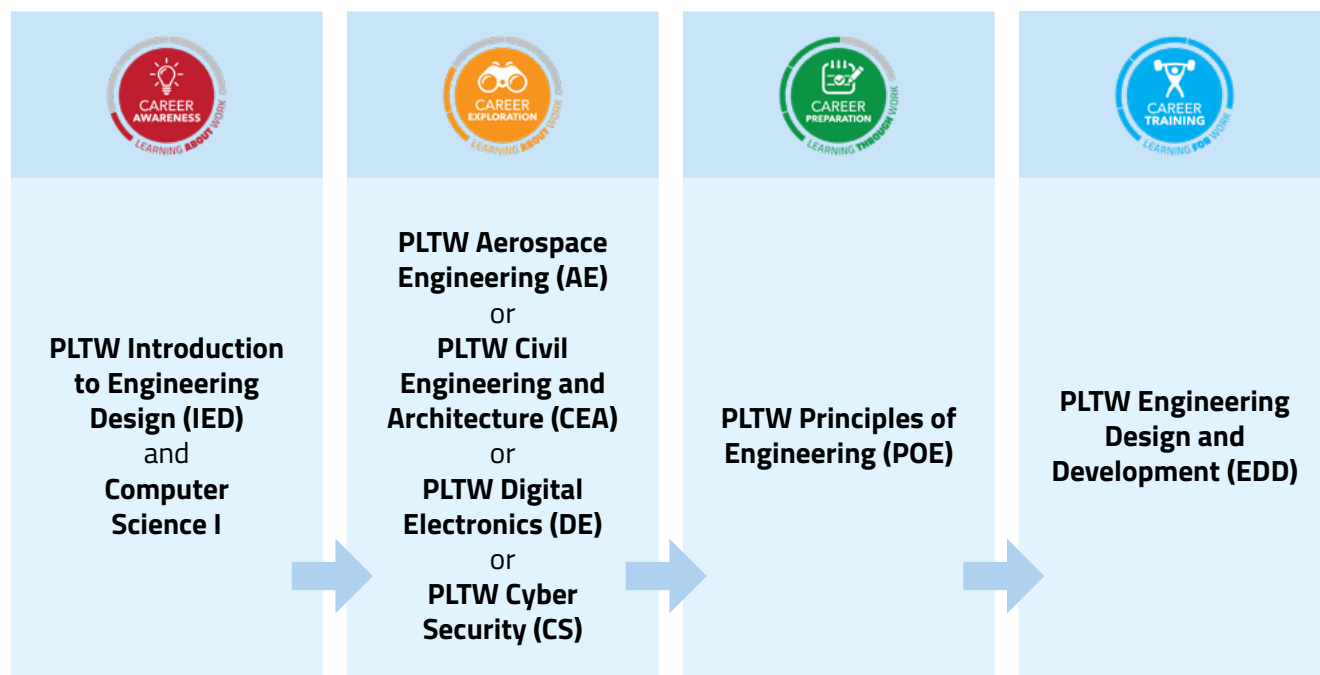


# STEM Academy

Bring your ideas to life while designing, building, and testing solutions for complex engineering challenges.

(Located at Northwest High School)

## PLTW ACADEMY COURSES



## OTHER ACADEMY COURSES

### STEM Science

- 9 STEM Honors Biology
- 10 STEM Honors Chemistry
- 11 STEM OnRamps Physics
- 12 Advanced Science

### STEM Math

- 9 STEM Honors Geometry
- 10 STEM OnRamps Algebra II
- 11 Honors Precalculus
- 12 AP Calculus AB or BC

### STEM English

- 9 STEM Honors English I
- 10 STEM Honors English II
- 11 STEM OnRamps English III
- 12 STEM English IV

### Optional STEM Courses

- 10 Computer Science II or PLTW Cybersecurity
- 11 PLTW Cybersecurity or Scientific Research and Design STEM
- 12 Practicum in STEM or Project-Based Research

Check out our STEM Academy video on YouTube to learn more about the academy!



# **Transportation, Distribution, and Logistics**

**- Aviation and Aeronautics Academy**

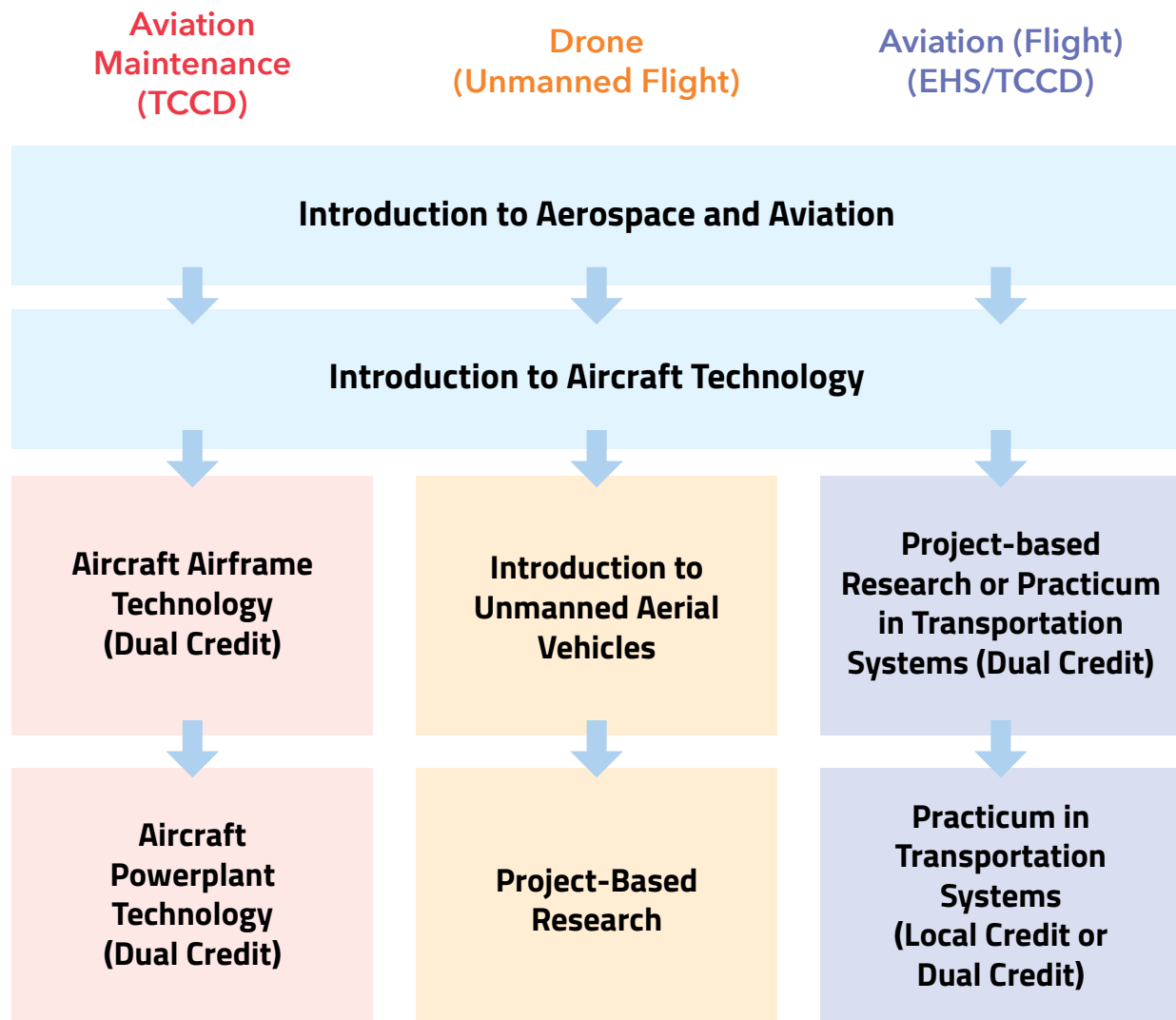


# Aviation and Aeronautics Academy

Explore modern military and commercial aviation in a high-demand, high-wage field meeting Federal Aviation Administration (FAA) standards.

(Located at V.R. Eaton High School)

## COURSE SEQUENCES



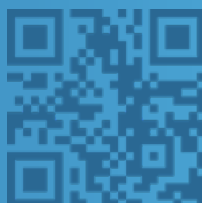
*\*See additional opportunities and extended course options in the NISD Academic Planning Guide.*

Check out our Aviation and Aeronautics Academy video on YouTube to learn more about the academy!

# A BIG THANKS TO ALL OUR 2020-2021 INTERNSHIP PARTNERS!



Check out our Internship Program video on YouTube to learn more about this opportunity!



# Want more info?

VISIT OUR WEBSITE

[nisdtx.org/cte](https://nisdtx.org/cte)

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NISD CCR

FIND TRANSLATED PDFS OF  
THIS BOOKLET HERE:

Spanish, French, Vietnamese



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## Northwest Independent School District Career & Technical Education Non-Discrimination Notice

The Northwest Independent School District offers career and technical education programs in Agriculture, Food & Natural Resources, Architecture & Construction, Arts, A/V Technology & Communications, Business Management & Administration, Education & Training, Finance, Health Science, Human Services, Information Technology, Law, Marketing, STEM, Technology Applications/Information Technology, and Transportation, Distribution & Logistics. Admission to these programs is based on open enrollment for all pathways. School of choice academies require additional requests.

It is the policy of the Northwest Independent School District not to discriminate on the basis of race, color, national origin, sex or handicap in its vocational programs, services or activities as required by Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; and Section 504 of the Rehabilitation Act of 1973, as amended.

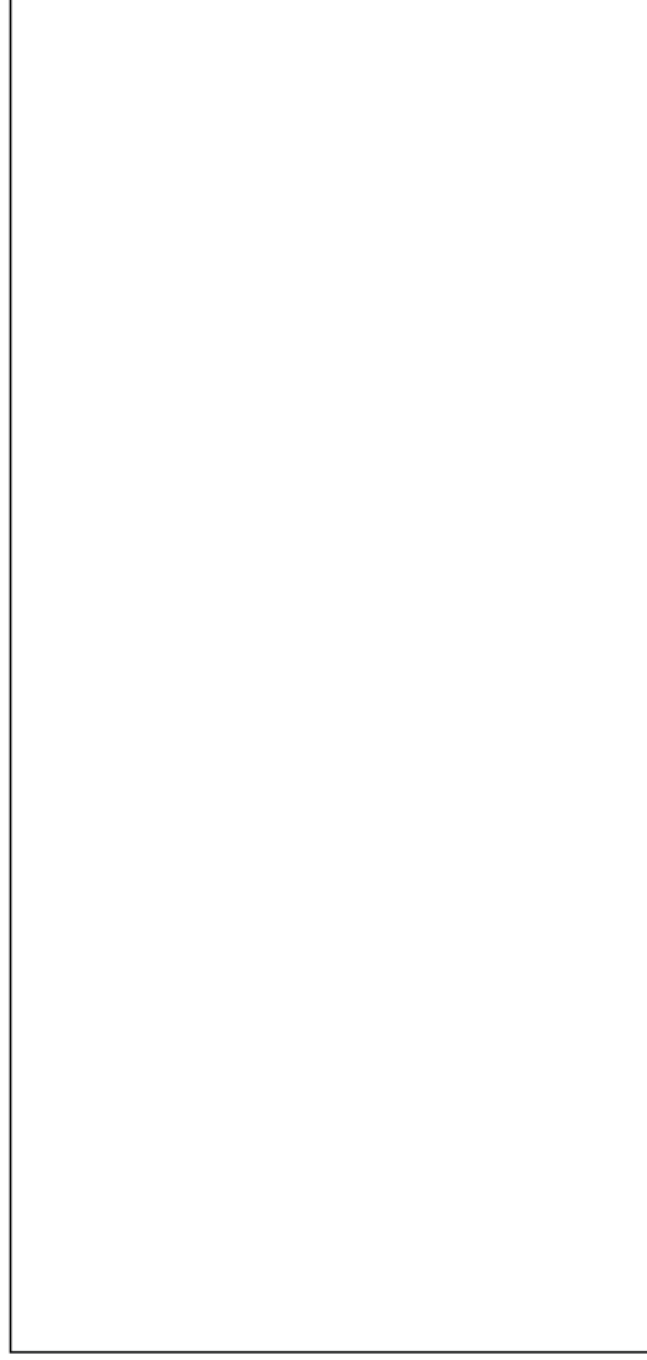
It is the policy of Northwest Independent School District not to discriminate on the basis of race, color, national origin, sex, handicap, or age in its employment practices as required by Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; the Age Discrimination Act of 1975, as amended; and Section 504 of the Rehabilitation Act of 1973, as amended.

The Northwest Independent School District will take steps to assure that lack of English language skills will not be a barrier to admission and participation in all educational and vocational programs.

For information about your rights or grievance procedures, contact the Title IX Coordinator, Mary Seltzer, at [mseltzer@nisdtx.org](mailto:mseltzer@nisdtx.org), 817-215-0968, and/or the Section 504 Coordinator, Victoria Cole, at [victoria.cole@nisdtx.org](mailto:victoria.cole@nisdtx.org), 817-698-1067. *criar loja virtual*



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