## Career and Technical Education OPPORTUNITY GUIDDE 2024 - 2025



NORTHWEST ISD Career & Technical Education

nisdtx.org/cte



#### NORTHWEST ISD College, Career & Military Readiness



#### 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. *\*Students request enrollment for the Cosmetology Academy in 10th grade to attend during their junior and senior years.* 

#### 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.

#### **Northwest High School**

**Byron Nelson High School** 



- Creative Media Production Academy
  - STEM Academy

#### V.R. Eaton High School



- Aviation and Aeronautics Academy
- Business Management and Entrepreneurship Academy

#### James M. Steele Early College High School



- Biomedical Sciences Academy
- Culinary Arts and Hospitality Academy



IAMES M. STEELE

EARLY COLLEGE HIGH SCHOOL

- Cosmetology Academy
- Early College High School

### **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 Exploration

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



### Career Preparation

#### Learning THROUGH Work

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



#### Career Training

#### Learning FOR Work

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

## 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. FFA leadership and competition experiences, industry certification options, and internship opportunities at local veterinary clinics.

#### **RECOMMENDED COURSE SEQUENCE**

#### Principles of Agriculture, Food, and Natural Resources (1 credit)



In this introductory course, students learn about the diverse career opportunities available in agriculture through experiences in leadership development (FFA), plant science, animal industry, food technology, and agriculture mechanics.

CERTIFICATION: OSHA 10-Hour



#### Livestock Production (1 credit)

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

#### Veterinary Medical Applications (1 credit)



This course is a hands-on introduction to the concepts and skills related to the veterinary science industry. Students develop competencies in the health, nutrition and safe handling of small and large animals, as well as surgical preparations, vaccine predation and injection technique, and medical terminology related to the anatomy, physiology, and infectious diseases of animals. Live animals will be used in this class for skill development.

**CERTIFICATION:** Certified Veterinary Assistant, Level 1



#### Advanced Animal Science (1 credit)

Students learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings. 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] (2 credits)

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.

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



## **Applied Agricultural Engineering**

Design and fabricate metal art projects and agriculture equipment using professional computer-aided design software and advanced welding techniques. FFA leadership and competition opportunities, industry certification options, and experience managing all aspects of a campus workshop.

#### **RECOMMENDED COURSE SEQUENCE**

#### Principles of Agriculture, Food, and Natural Resources (1 credit)



In this introductory course, students learn about the diverse career opportunities available in agriculture through experiences in leadership development (FFA), plant science, animal industry, food technology, and agriculture mechanics.

CERTIFICATION: OSHA 10-Hour



#### Agricultural Mechanics and Metal Technologies (1 credit)

This hands-on laboratory based course prepares students for entry-level skills needed for an applied agriculture engineering career such as safety practices, tool operation, carpentry, welding, plumbing, concrete and electrical wiring. Students will work toward the skills needed for AWS Welding Certification.

#### Agricultural Equipment Design and Fabrication with Lab (2 credits)



This project-based course helps students develop knowledge and skills needed for a career in mechanized agriculture. Students take the skills learned in Agriculture Mechanics and Metal Technology to design and fabricate agricultural equipment projects.

CERTIFICATIONS: AWS (American Welding Society) Certified Welder



#### Practicum in Agriculture, Food, and Natural Resources [Internship] (2 credits)

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.

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







## Plant Science

Design and create innovative art using a variety of plants and flowers. Focus on the science, research and business of plants and other living organisms. FFA leadership and competition opportunities, industry certification options, and experience managing all aspects of a full-service floral studio and greenhouse.

#### **RECOMMENDED COURSE SEQUENCE**

#### Principles of Agriculture, Food, and Natural Resources (1 credit)



In this introductory course, students learn about the wonderful career opportunities available in agriculture through experiences in leadership development (FFA), plant science, animal industry, food technology, and agriculture mechanics.

CERTIFICATION: OSHA 10-Hour



#### Horticulture Science (1 credit)

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



#### Greenhouse Operations and Production (1 credit)

This course is designed to develop students' understanding of greenhouse production techniques and practices. Students gain knowledge of common horticulture management practices related to food and ornamental plant production. Students will have the opportunity to work in the school's greenhouse.

OR



#### Floral Design I (1 credit)

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.* 

CERTIFICATIONS: Texas State Florists' Association Knowledge Base and Level 1



#### Advanced Floral Design (1 credit)

In this course, students build on the knowledge and skills learned in Floral Design 1. More advanced floral design concepts are introduced with an emphasis on specialty designs and special occasion planning. Students have the opportunity to work in a full-functioning floral design studio on campus.

**CERTIFICATION:** Texas State Florists' Association Level 2





#### Practicum in Agriculture, Food, and Natural Resources [Internship] (2 credits)

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.

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Architectural Design

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## **Architectural Design**

Visualize, design, and create construction documents for a wide range of building types. Develop a comprehensive portfolio with computerized architectural and interior design elements. Students work with industry standard software and earn certifications.

#### **RECOMMENDED COURSE SEQUENCE**

#### **Principles of Architecture (1 credit)**



This course provides an overview to the various fields of architecture, interior design, and construction management. Students develop professional skills, investigate career opportunities and the skills necessary to work in this industry. Studies include project planning, hand-drawing, reading plans, identifying appropriate materials, creating models and portfolio development.

CERTIFICATION: OSHA 10-Hour

#### Architectural Design I (1 credit)



This course focuses on the knowledge and skills needed to enter a career in architecture or construction. Students learn about design, design history, techniques and tools related to both residential and nonresidential buildings. Projects include drawings (by hand and computer software), renderings, site plans, elevations, scale models and professional portfolio.

#### Computer Aided Drafting for Architecture (1 credit)



This course focuses on learning industry standard drafting skills through Autodesk Revit. Studies include setting up a CAD workstation and working with software ribbons to increase design skills. Students build depth of knowledge in the software and gain the skills of a drafter. Students work on large-scale design projects using Gantt Charts, bubble diagrams and more to simulate the professional work of an architect.

**CERTIFICATION:** Autodesk Revit

#### Architectural Design II (2 credits)



This advanced course builds on previous knowledge and immerses students in a workplace environment. Studies 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 embeds sustainable design with a focus in architectural design.

**CERTIFICATION:** Autodesk CAD

\*See additional opportunities/courses in the NISD Academic Planning Guide, page 129.

Check out our *Architectural Design Pathway* video on YouTube to learn more about this opportunity!

## Arts, Audio/ Video Technology & Communications

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

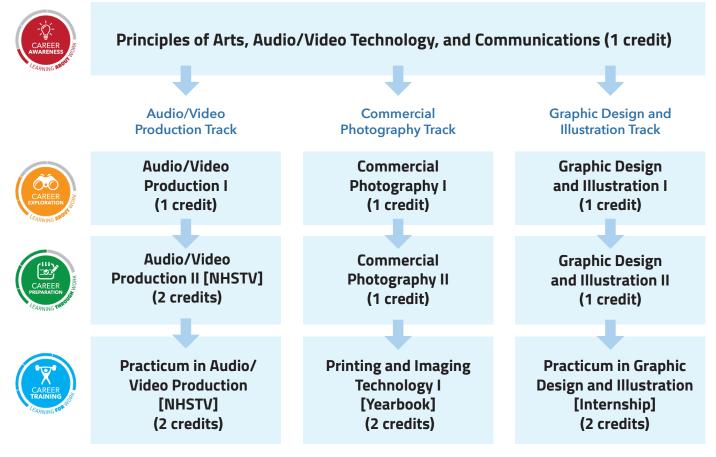


## **Creative Media Production Academy**

#### Located at Northwest High School

Gain strong computer, technology and production skills, and proficiency in oral and written communication. Develop a comprehensive portfolio displaying creativity, depth of projects, and industry-recognized certifications. After completing the freshman Academy course, students choose a track in A/V Production, Photography or Graphic Design as their focus.

#### ACADEMY TRACKS AND COURSE SEQUENCES



\* Academy students can take any course in the CMP 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. See opportunities/courses in the NISD Academic Planning Guide, pages 130-140.

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







## **Design and Multimedia Arts**

Learn the principles of design, advertising and marketing using color, texture, typography, and photo editing. 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 (1 credit)



Course includes an introduction to audio and video production, graphic design and illustration, and principles of animation. Adobe Creative Cloud applications are 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.* 

CERTIFICATIONS: Adobe Photoshop, Illustrator, and Premiere Pro

#### Graphic Design and Illustration I (1 credit)



Students learn the basics of Adobe Illustrator and Photoshop. Students work together and independently on several projects that will teach them the basic principles of design, advertising and marketing. Students learn about color, composition, drawing, texture, photo editing and typography.

CERTIFICATIONS: Adobe Photoshop, Illustrator, and Premiere Pro

#### Commercial Photography I (1 credit)



Course provides the foundations for a photography career as students learn the basics of camera operation, including utilizing creative and manual camera modes, basic photo composition, and concepts for photography in multiple genres. Lighting techniques are explored in both studio and in natural light settings. Students also learn basic retouching and editing via Adobe applications. With an exploration into photography history, copyright, and basic business practices, students gain knowledge of photography beyond simply effective image capture.

**CERTIFICATION:** Adobe Photoshop

#### Career Preparation I (2 credits)



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, pages 137-138.

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 with professional equipment for entry-level employment in audio, video, television, and film. Create, produce and deliver video, audio, and digital graphics for campus video announcements.

#### **RECOMMENDED COURSE SEQUENCE**



Course includes an introduction to audio and video production, graphic design and illustration, and principles of animation. Adobe Creative Cloud applications are 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.

CERTIFICATIONS: Adobe Photoshop, Illustrator, and Premiere Pro

#### Audio/Video Production I (1 credit)



Course explores the audio and video production industry, including postsecondary educational and career opportunities. Students gain relevant experience working with BNTV (BNHS) or EGLTV (EHS) for video announcements. Professional equipment and Adobe Creative Cloud software used to create student productions. Several class and small group audio, video, and film-style production projects.

CERTIFICATIONS: Adobe Photoshop, Illustrator, and Premiere Pro

#### Audio/Video Production II (1 credit)



Students in this course gain additional experience working a second year of BNTV (BNHS) or EGLTV (EHS). Students work as employees for the campus television station producing a live TV show each day in the state-of-the-art HD television production facility. Students work as reporters, anchors, producers and crew members. Students work on several audio and/or video productions created for television, cable television, education, radio, entertainment, business and/or industry.

#### Career Preparation I/ Practicum in Audio/Visual Production (2 credits)



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 *Arts, Audio/Video Technology, and Communications Pathways* video on YouTube to learn more about Digital Communications!

## Business Markeing, 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. Learn how to generate, analyze, and interpret financial data, and earn industry-recognized certifications.

#### **RECOMMENDED COURSE SEQUENCE**





This course explores basic business operations for the sale of goods and services, advertising strategies businesses use, and financial management for business.

**CERTIFICATION:** Communication Skills for Business



#### Accounting (1 credit)

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.

**CERTIFICATION:** Intuit QuickBooks

#### Financial Analysis (1 credit)



Students apply knowledge and technical skills in the economic, financial, technological, international, social, and ethical aspects of business to become competent consumers, employees, and entrepreneurs. Students will develop analytical skills by actively evaluating financial results of multiple businesses, interpreting results for stakeholders, and presenting strategic recommendations for performance improvement.

#### Securities and Investments (1 credit)

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The course is designed to provide students with a fundamental understanding of the world of finance, stocks, bonds, investments and investment strategies. Whether you dream of becoming a Wall Street wizard or just want to make informed financial decisions, this course will equip students with the knowledge and skills to navigate the exciting world of securities and investments.

OR



#### Career Preparation I (2 credits)

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 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, pages 142-43.



### Business Management and Entrepreneurship Academy

#### Located at V.R. Eaton High School

Build a business as part of the next generation of socially-responsible entrepreneurs and global business leaders finding innovative solutions to today's challenges. Develop professional skills and earn industry-recognized certifications.

#### ACADEMY COURSE SEQUENCE

#### BME Fundamentals (1 credit)



In this unique hands-on business startup experience, students are challenged to solve a problem or fill a need in their community, and experience launching and operating a business. Students explore the sale of goods and services, advertising and marketing strategies, and financial management for a business.

CERTIFICATIONS: Microsoft Office Associate: PowerPoint, Communication Skills for Business

#### BME Operations I (.5 credit) + BME Operations II (.5 credit)



The first semester course focuses on virtual (e-commerce) business development and establishing a web presence. During the second semester course, students learn the skills to become effective marketers by simulating promotional activities for a business and developing marketing strategies and plans.

CERTIFICATIONS: Entrepreneurship & Small Business; Microsoft Office Associate: Word



#### BME Innovation (1 credit)

This course focuses on helping 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.

**CERTIFICATIONS:** Microsoft Office Associate: Excel, CareerSafe Interview Skills

#### BME Capstone (2 credits)



Student teams develop a business plan for a virtual start-up company and participate in marketing and selling their product in the Virtual Enterprises International virtual economy. Students assume job roles and responsibilities for their VEI firm, incorporating a broad base of legal, managerial, marketing, financial, ethical, and international business knowledge.

CERTIFICATIONS: Microsoft Office Expert: Excel and Word, OSHA 10-Hour

\*See additional opportunities/courses in the NISD Academic Planning Guide, page 147.

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







## **Business Management**

Students choose the Business Management or Business Info Management track. Develop foundational business knowledge, and explore the responsibilities of being a manager for an organization. Learn and apply interpersonal and technical skills used in business, and earn industry-recognized certifications.

#### **BUSINESS MANAGEMENT TRACK COURSE SEQUENCE**



This course explores basic business operations for the sale of goods and services, advertising strategies businesses use, and financial management for business.

**CERTIFICATION:** Communication Skills for Business

Principles of Business, Marketing, and Finance (1 credit)



#### Business Management (1 credit)

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.

**CERTIFICATION:** Entrepreneurship & Small Business



#### Business Law (1 credit)

Students analyze various legal aspects 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 (1 credit)

Students develop technical skills creating documents, spreadsheets, presentations, and using email client/personal information manager using Microsoft Office software. **CERTIFICATIONS:** Microsoft Office Associate: Word, Excel and PowerPoint



#### Practicum in Business Management [Internship] (2 credits)

Practicum in Business Management is designed to give students supervised practical application of previously studied knowledge and skills. 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.





#### Career Preparation I (2 credits)

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 supports student attainment of academic standards, and effectively prepares students for college and career success.



#### **BUSINESS INFORMATION MANAGEMENT TRACK COURSE SEQUENCE**



#### Principles of Business, Marketing, and Finance (1 credit)

Students explore basic business operations for the sale of goods and services, advertising strategies businesses use, and financial management for business.

**CERTIFICATION:** Communication Skills for Business



#### Business Information Management I (1 credit)

Students develop technical skills creating documents, spreadsheets, presentations, and using email client/personal information manager using Microsoft Office software. **CERTIFICATIONS:** Microsoft Office Associate: Word, Excel and PowerPoint



#### Business Information Management II (1 credit)

Students apply technical skills to address business applications of emerging technologies, create complex documents, develop sophisticated spreadsheets using charts and graphs, and produce advanced electronic presentations using multimedia software.

CERTIFICATIONS: Microsoft Office Expert: Word, Excel and Access



#### Business Management (1 credit)

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.

**CERTIFICATION:** Entrepreneurship & Small Business

OR



#### Practicum in Business Management [Internship] (2 credits)

Practicum in Business Management is designed to give students supervised practical application of previously studied knowledge and skills. 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 (2 credits)

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 supports student attainment of academic standards, and effectively prepares students for college and career success.

Concepts learned and skills developed in the Business Management program can be applied in many career paths and industries!

## Education and Training

- Early Learning

- Teaching and Training



## **Early Learning**

Focus on early childhood education, and examine the developmental milestones and skills related to child growth and learning. Gain experience as part of field-based observations and internships with local learning centers, and earn industry-recognized certifications.

#### **RECOMMENDED COURSE SEQUENCE\***

#### Principles of Education and Training (1 credit)



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 serves as a foundation for future education courses.



#### Child Development (1 credit)

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, and investigate careers that work with children.

CERTIFICATIONS: Heartsaver CPR and First Aid



#### Child Guidance [Internship] (2 credits)

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 Early Learning [Internship] (2 credits)



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.

CERTIFICATION: Educational Aide 1, Child Development Associate (CDA)

\*Students who begin this program in middle school will be on an advanced track. See courses offered in middle school in the NISD Academic Planning Guide, page 152.



## **Teaching and Training**

Teach and coach side-by-side with professional educators in a variety of school settings. Students can earn industry certifications, college credit and a Northwest ISD Priority Interview Certificate.

#### **RECOMMENDED COURSE SEQUENCE\***

#### Principles of Education and Training (1 credit)



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 have field-based teaching observation opportunities and create a portfolio that serves as a foundation for future education courses.

#### Child Development (1 credit)



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, and investigate careers that work with children.

CERTIFICATIONS: Heartsaver CPR and First Aid

### Instructional Practices [Internship] with Dual Credit option (2 HS credits/3 College hrs)



This course is a field-based internship with students working under the joint direction of their course instructor and a mentor teacher on an NISD 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 educational personnel.

**CERTIFICATION:** Google Certified Educator

### Practicum in Education and Training [Internship] with Dual Credit option (2 HS credits/3 College hrs)



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

**CERTIFICATION:** Educational Aide 1

\*Students who begin this program in middle school will be on an advanced track. See courses offered in middle school in the NISD Academic Planning Guide, page 155.

Check out our Teaching and Training Program video on YouTube to learn more!





# Health Science

Biomedical Sciences Academy
Healthcare Diagnostics
Healthcare Therapeutic



## **Biomedical Sciences Academy**

#### Located at Byron Nelson High School

Focus on the study of biology and medicine to introduce the knowledge and skills necessary to be successful in the healthcare field, such as researching and diagnosing diseases, preexsisting conditions, or other determinants of health. Apply critical thinking and collaboration skills to design, conduct and analyze a wide range of scientific experiments.

#### PROJECT LEAD THE WAY (PLTW) ACADEMY COURSE SEQUENCE

#### PLTW Principles of Biomedical Sciences (1 credit)



This 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. 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 (1 credit)



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<sup>®</sup>; 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 (1 credit) Students follow the life of a fictitious fami

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 organs 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 (1 credit)



This course builds 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. Opportunity to work on an independent design project with a mentor or advisor from a university, medical facility, or research institution.

**CERTIFICATIONS:** Biotechnician Assistant (BACE), Basic Life Support CPR, Microsoft Office Associate: Excel

Check out our Biomedical Sciences Academy video on YouTube to learn more!







Explore occupations and educational opportunities related to diagnosing and treating acute, episodic, or chronic illness independently or as part of a healthcare team. Gain experience as part of field-based observations and internships, and earn **Emergency Medical Technician (EMT) and EKG Technician certifications.** 

#### **RECOMMENDED COURSE SEQUENCE**

#### Principles of Health Science (1 credit)



This course provides 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 careers.

CERTIFICATIONS: OSHA 10-Hour, Heartsaver CPR and First Aid



#### Health Science Theory (1 credit)

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 (1 credit)



Students 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. Topics will be presented through an integration of biology, chemistry, and physics. In this laboratory course, 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 (EMT/EKG) [Internship] (2 credits)



This course is designed to give students practical application of previously studied knowledge and skills in order to become an industry certified Emergency Medical Techician and EKG Technican. Practicum experiences occur in a variety of clinical locations and first responder ride-alongs.

**CERTIFICATIONS:** Emergency Medical Technician (EMT), Certified EKG Technician, Basic Life Support CPR



## Healthcare Therapeutic

Explore occupations and educational opportunities related to diagnosing and treating acute, episodic, or chronic illness independently or as part of a healthcare team. Gain experience as part of field-based observations and internships, and earn **Certified Clinical Medical Assistant (CCMA) and EKG Technician certifications.** 

#### **RECOMMENDED COURSE SEQUENCE**

#### Principles of Health Science (1 credit)



This 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 careers.

CERTIFICATIONS: OSHA 10-Hour, Heartsaver CPR and First Aid



#### Health Science Theory (1 credit)

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 (1 credit)



Students 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. Topics will be presented through an integration of biology, chemistry, and physics. In this laboratory course, 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 (CCMA/EKG) [Internship] (2 credits)



This course is designed to give students practical application of previously studied knowledge and skills, including phlebotomy, CPR, vital signs, and nursing, in order to become an industry Certified Clinical Medical Assistant and EKG Technican. Practicum provides a unique experience that allows students the opportunity to participate in a learning environment that combines classroom instruction with real industry career experiences in a professional medical setting.

**CERTIFICATIONS:** Certified Clinical Medical Assistant (CCMA), Certified EKG Technician, Basic Life Support CPR

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

# **Hospitality and Jourism**

- Culinary Arts and Hospitality Academy



### Culinary Arts and Hospitality Academy

#### Located at Byron Nelson High School

Craft innovative dishes alongside professional chefs using advanced industry equipment. Gain experience in running a full-service restaurant at the student-managed Byron Bistro, and earn industry certifications and college credit.

#### ACADEMY COURSE SEQUENCE





Students learn knowledge and skills focusing on food and beverage management, food cost control and customer service that meet industry standards. Students explore the history of the hospitality and tourism industry, and examine characateristics needed for success.

**CERTIFICATION:** ServSafe Food Handler

#### Introduction to Culinary Arts with Dual Credit (1 HS credit/6 College hrs)



In this classroom and laboratory-based course, students develop an understanding of the operation of a well-run restaurant. This course provides insight into sanitation and safety, food production and hospitality skills, as well as various levels of industry management. Students gain practical experience managing front of house operations at Byron Bistro, a student-operated restaurant open to NISD staff and the public.

**CERTIFICATION:** ServSafe Manager



#### Culinary Arts with Dual Credit (2 HS credits/9 College hrs)

Students learn the principles of the art of cooking and science of baking, including management and production skills. This laboratory-based course covers the fundamentals of basic cooking techniques, baking and pastry, purchasing, food identification and preparation.

#### Practicum in Culinary Arts in Culinary Arts (Internship) with Dual Credit (3 HS credits/6 College hrs)



This practicum course integrates academic and technical skills; provides more interdisciplinary instruction; and supports partnerships among schools and businesses to prepare students with a variety of skills in a fast-changing workplace. Students gain operational experience working in the Byron Bistro.

**CERTIFICATIONS:** Culinary Arts Level 1 Certificate (TCC), Certified Fundamentals Cook - American Culinary Federation

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





## Lunan Services

Cosmetology Academy
 Family and Community Services



## **Cosmetology Academy**

24-25: Located at Steele Early College High School Beginning 25-26: Located at Northwest High School

Students from Bryon Nelson, Northwest and V.R. Eaton High Schools can complete Cosmetology/Barbering training during their **junior and senior years.** Operate and experience a full-service salon and spa environment, and have the opportunity to take the state exam and become a licensed Cosmetologist as part of this two-year program.

#### **ENROLLMENT REQUESTS**

Students request enrollment during their sophomore year to attend the Cosmetology Academy for part of their day when they are juniors and seniors. Students remain enrolled at their home campus to take core classes. Transportation is available to and from home campus to the Cosmetology Academy.

#### ACADEMY COURSE SEQUENCE



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.

CERTIFICATION: OSHA 10-Hour, BARBICIDE®

11th Grade: Cosmetology I with Lab (3 credits)

#### 12th Grade: Cosmetology II with Lab (3 credits)



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.

**CERTIFICATION:** Texas Cosmetology License, Milady Advanced Services: Eyelashes

Check out our Cosmetology Academy video on YouTube to learn more!







## Family and Community Services

Investigate complex social and emotional challenges to understand their effects on individuals, communities, and society. Research career opportunities, discover what it takes to succeed in counseling and mental health professions, and earn industry certifications.

#### **RECOMMENDED COURSE SEQUENCE\***



#### Principles of Human Services (1 credit)

This course 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. Students will be introduced to careers in counseling and mental health, child development, family and community, personal care services and consumer services.



#### Family and Community Services (1 credit)

This 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 (1 credit)

Students investigate 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] (2 credits)



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.

CERTIFICATION: Community Health Worker (CHW)

\*Students who begin this program in middle school will be on an advanced track. See courses offered in middle school in the NISD Academic Planning Guide, page 174.

## Manufacturing

- Advanced Manufacturing and Machinery Mechanics



### Advanced Manufacturing and Machinery Mechanics

Learn manufacturing processes and practices, and the tools and technology used to solve problems, including robotics, electrical controls, pneumatics and hydraulics. Students develop and apply design process skills to create engineering drawings with 3D software, and earn industry certifications.

#### **RECOMMENDED COURSE SEQUENCE**

#### Principles of Manufacturing (1 credit)



This course is an introduction to manufacturing processes and technology used to solve problems. Course studies the tools, technology and processes used to influence manufacturing practices. Students learn sketching techniques to create multi-view drawings and interpret blueprint drawings.

**CERTIFICATION:** Certified SolidWorks Associate

#### Manufacturing Engineering Technology I (1 credit)



Students will gain knowledge and skills in the application, design, production, and assessment of products, services, and systems and how they are applied to manufacturing. Coursework includes working in CAD to complete designs, writing programmable logic controls for robot systems, designing products using a CNC machine/lathe, working with mechanical, fluid, thermal and electrical systems. Students will understand quality-control systems through the use of industrial standards and Pareto charts.

**CERTIFICATION:** Smart Automation Certification Alliance (SACA) Silver

#### Manufacturing Engineering Technology II (1 credit)



Students will reinforce, apply, and transfer knowledge and skills to develop systems using electrical controls and pneumatics or hydraulics devices, troubleshoot programmable logic controls for robot systems and develop a product on a CNC machine/lathe. Coursework includes using mathematical processes to analyze mathematical relationships, communicate ideas, and justify mathematical ideas/arguments.



#### Practicum in Manufacturing (2 credits)

This course is designed to provide practical application of knowledge and skills gained in prior courses. Students will work to build a professional portfolio showcasing their knowledge and skills while working with their teacher and mentor to plan a large-scale project planning, managing and performing the processing of materials into final products.

Check out our Advanced Manufacturing Program video on YouTube to learn more!





# Information Jechnology

- Networking Systems



## **Networking Systems**

Learn and apply technical skills to design, install and troubleshoot complex network systems. Earn industry-recognized certifications, build professional skills, and develop a portfolio showcasing accomplishments, skills, and artifacts.

#### **RECOMMENDED COURSE SEQUENCE**

#### Principles of Information Technology (1 credit)



In this course, students will develop computer literacy, 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. 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 (1 credit)



Students will apply technical skills to address the IT industry and emerging technologies. This course includes 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 (1 credit)



Students will develop knowledge and skills related to data networking technologies and practices to apply them in personal or career development. Students will be able to analyze telecommunications and data network services to address industry needs. Coursework includes creating a network design plan with appropriate documentation and a preventative maintenance plan.

CERTIFICATION: Information Technology Specialist: Networking



#### Practicum in Information Technology [Internship] (2 credits)

This practicum course includes an on- or off-campus internship or mentorship with an industry professional. Students will work with their mentor to identify a problem in IT, 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.





#### Independent Study in Technology Applications (2 credits)

Students 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.

\*See additional opportunities/courses in the NISD Academic Planning Guide, page 178.

## Science, Technology, Engineering, and Mathematics

Programming and Software Development
 STEM Academy



### Programming and Software Development

Learn to develop software solutions using industry-recognized computer languages. Work individually and in teams to design and engineer the code that powers the modern world.

#### **RECOMMENDED COURSE SEQUENCE**

#### Computer Science I (1 credit)

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 proficiency in digital citizenship.

#### Computer Science II (1 credit)



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

CERTIFICATION: Certified Entry-Level Python Programmer (PCEP)



#### **Computer Science III (1 credit)**

Students will build on previous knowledge and skills in this advanced computer science course. Course studies include comparing and contrasting high-level programming languages, model ethical acquisition and use of digital information, developing algorithms to solve problems. Curriculum incorporates HTML/CSS.

CERTIFICATION: Certified Associate in Python Programming (PCAP)



Practicum in Information Technology [Internship] (2 credits)

This practicum course includes an on- or off-campus internship or mentorship with an industry professional. Students will work with their mentor to identify a problem in IT, 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.

OR



#### Independent Study in Technology Applications (2 credits)

Students 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.

\*NOTE: Computer Science I, II, and III satisfy state requirements for Languages other than English (LOTE).

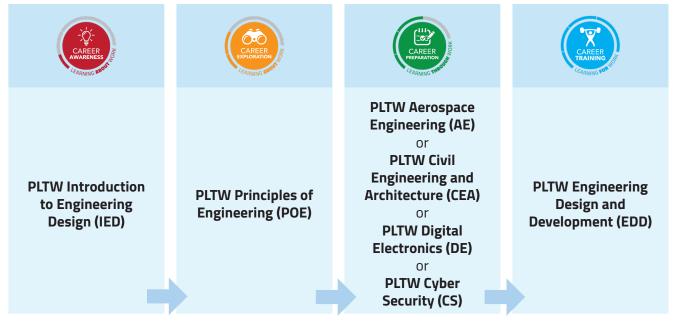


## **STEM Academy**

Located at Northwest High School

Bring ideas to life while designing, building, and testing solutions for complex engineering challenges. Using Project Lead the Way curriculum, students build professional skills, earn industry-recognized certifications, and develop a portfolio showcasing accomplishments and skills.

#### **PROJECT LEAD THE WAY (PLTW) ACADEMY COURSES**



#### **CERTIFICATIONS:** Autodesk AutoCAD, Revit and Fusion 360

#### **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 or OnRamps 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 **or** STEM English IV AP **or** DC Technical & Business Writing

#### **Optional STEM Courses**

- 9 Honors Computer Science I
- 10 Honors Computer Science II or PLTW Cybersecurity
- **11** Honors Computer Science III **or** PLTW Cybersecurity **or** Scientific Research and Design STEM
- 12 Practicum in STEM or Engineering Design and Problem Solving







## Transportation, Distribution, and Logistics

- Aviation and Aeronautics Academy

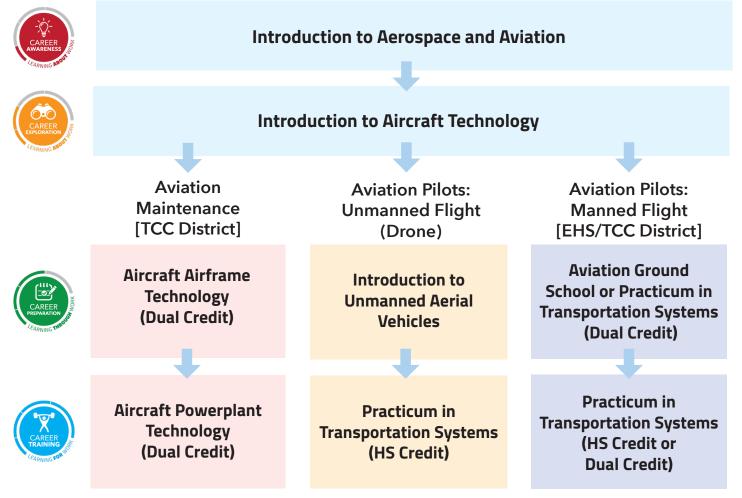


## **Aviation and Aeronautics Academy**

#### Located at V.R. Eaton High School

Explore modern military and commercial aviation in high-demand, high-wage fields meeting Federal Aviation Administration (FAA) standards. After completing the freshman and sophomore Academy courses, students choose a track in Aviation Maintenance, Unmanned Flight or Manned Flight as their focus.

#### ACADEMY TRACKS AND COURSE SEQUENCES



**CERTIFICATIONS:** Vary by program - FAA Private Pilot, FAA Small Unmanned Aircraft, FAA AMT-General. Additional advanced certifications are available on a per-student basis.

\*See additional opportunities and extended course options in the NISD Academic Planning Guide, pages 192-199.

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





## A BIG THANK YOU TO EACH OF OUR 2023-2024 INTERNSHIP PARTNERS!



Check out our Internship Program video on YouTube to learn more about internship opportunities!







#### **NISD STUDENT INTERN SPONSORS**

#### EARLY LEARNING AND TEACHING & TRAINING SCHOOLS

Adams Middle Beck Elementary Berkshire Elementary Chisholm Trail Middle Clara Love Elementary Curtis Elementary Granger Elementary Haslet Elementary Hatfield Elementary Justin Elementary Lakeview Elementary Medlin Middle Nance Elementary Pike Middle Prairie View Elementary Roanoke Elementary Schluter Elementary Sendera Ranch Elementary Tidwell Middle Wilson Middle Worthington Middle

#### HEALTH SCIENCE CAMPUS CLINICS

Adams Middle **Beck Elementary** Berkshire Elementary Carter Elementary Chisholm Trail Middle Clara Love Elementary Cox Elementary Curtis Elementary Daniel Elementary Granger Elementary Haslet Elementary Hatfield Elementary Hughes Elementary JC Thompson Elementary Justin Elementary Lakeview Elementary Lance Thompson Elementary Medlin Middle Nance Elementary Peterson Elementary Pike Middle Praire View Elementary Roanoke Elementary Schluter Elementary Sendera Ranch Elementary Seven Hills Elementary Tidwell Middle Wilson Middle Worthington Middle

## STUDENT ENTERPRISES NRO1 O'ISTRO **\* BYRON NELSON \* BOBCAT DESIGNS** BYRON CADEM EATON EATON METAL DESIGNS ATON Pet 💥 Spa E

CAMPUS-BASED





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### nisdtx.org/cte

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## THIS BOOKLET HERE:



#### 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, Marketing & Finance, Education & Training, Health Science, Hospitality & Tourism, Human Services, Manufacturing, Information Technology, STEM, 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 and provides equal access to the Boy Scouts and other designated youth groups 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.

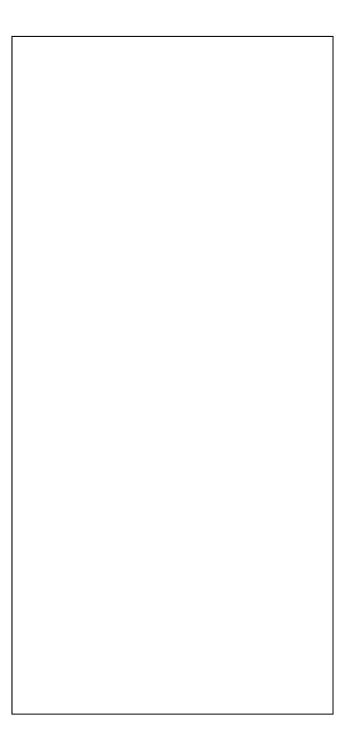
It is the policy of Northwest Independent School District not to discriminate on the basis of race, color, national origin, sex, handicap, or age in its employment practices as required by Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; the Age Discrimination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

Individuals may report concerns or questions under Title IX to Dr. Cindy Bauter, Executive Director of Student Affairs and Title IX Coordinator, 2001 Texan Dr. Justin, TX 76247, (817)215-0567, cynthia.bauter@nisdtx.org. Individuals may report concerns or questions under ADA/Section 504 to Lilia Vasquez, 504/At Risk Coordinator, 2001 Texan Dr. Justin, TX 76247, (817)698-1067, lilia.vasquez@nisdtx.org. The notice of the district nondiscrimination is located at https://www.nisdtx.org/about-nisd/student-affairs.



PO Box 77070 | Fort Worth, TX 76177



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