Career and Technical Education

OPPORTUNITY
GUIDE

2022 - 2023

NORTHWEST ISD
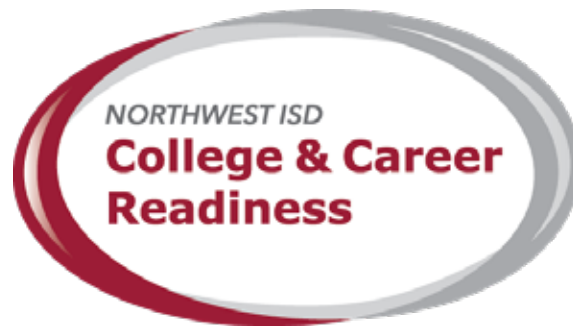**Career & Technical Education**

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.

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.

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

JAMES M. STEELE
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 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.

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-Hour 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-Hour 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 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 AWS Welding and OSHA 30-Hour 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!

AGRICULTURE, FOOD, AND NATURAL RESOURCES PATHWAYS
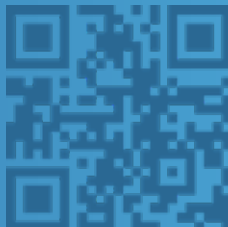
Plant Science

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-Hour 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!
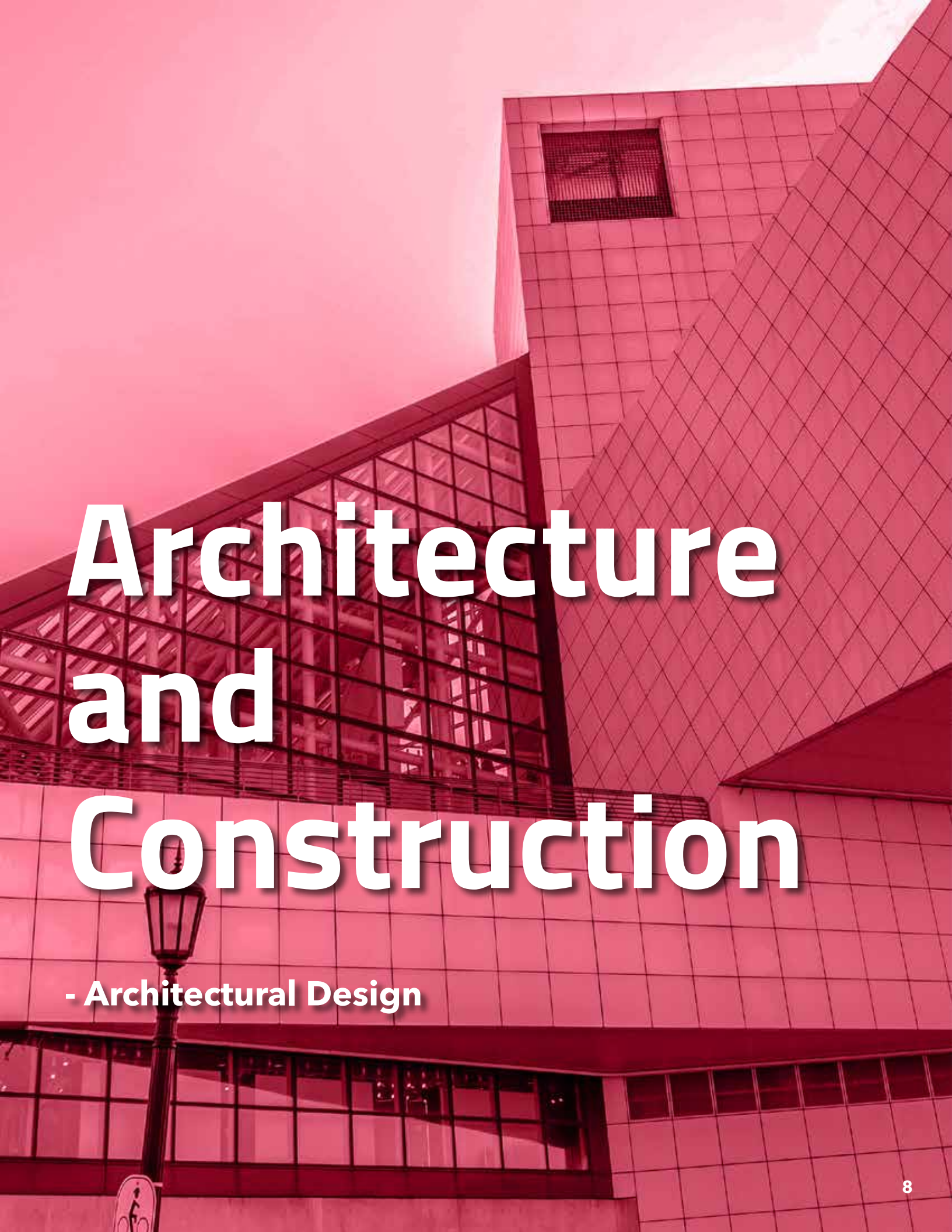
Architecture and Construction

- 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

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 OSHA 10-Hour certification and Microsoft 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 Microsoft certifications 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 build 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 certifications in AutoDesk Revit and Microsoft, 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 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 AutoDesk Revit certification with a focus in architectural design.

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

Check out our Architectural Design 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)

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!

CREATIVE MEDIA PRODUCTION ACADEMY
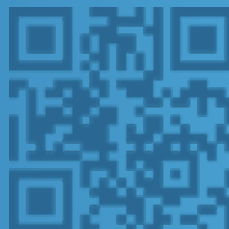
Design and Multimedia Arts

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

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 Digital Communications!

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.

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

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 MANAGEMENT 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.

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 INFORMATION MANAGEMENT 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.

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 Early Learning (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.

Students who begin this program in middle school will be on an Advanced Track. 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.

Students who begin this program in middle school will be on an Advanced Track. See additional opportunities/courses in the NISD Academic Planning Guide.

Check out our Teaching and Training Program video on YouTube to learn more!
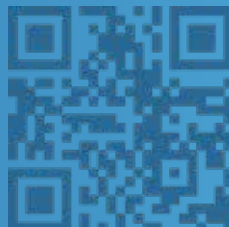
TEACHING AND TRAINING PATHWAY

Health Science

- **Biomedical Sciences Academy**
- **Healthcare Diagnostics**
- **Healthcare Therapeutic**

Biomedical Sciences Academy

The Biomedical Sciences program 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)

PROJECT LEAD THE WAY (PLTW) ACADEMY 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.

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.

Health Science Theory

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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

This is an entry-level classroom and laboratory-based course for students interested in pursuing a career in the food service industry. Students will develop an understanding of the operation of a well-run restaurant. This course will provide insight into food production skills, various levels of industry management, and hospitality skills. Students can pursue a national sanitation certification or other appropriate industry certifications.

Culinary Arts

Students will learn the principles of the art of cooking and the science of baking, including management and production skills. Course covers fundamentals of basic cooking techniques, baking and pastry, food identification and preparation. 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!

CULINARY ARTS & HOSPITALITY ACADEMY
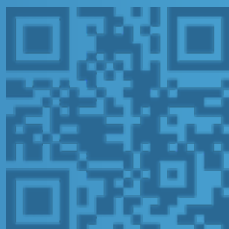
Human Services

- Cosmetology Academy
- Family and Community Services

Cosmetology Academy

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

(Located at Steele Early College High School)

*Students from NHS, BNHS, and EHS can 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.

No 10th Grade course offered.

Cosmetology I with Lab

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 with Lab

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.

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

COSMETOLOGY ACADEMY
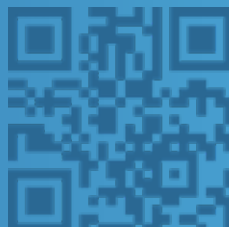
Family and Community Services

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.

Students who begin this program in middle school will be on an Advanced Track. See additional opportunities/courses in the NISD Academic Planning Guide.

Manufacturing

- Advanced Manufacturing and
  Machinery Mechanics

Advanced Manufacturing and Machinery Mechanics

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

RECOMMENDED COURSE SEQUENCE

Principles of Manufacturing

This course is an introduction to manufacturing processes and technology used to solve problems. Students will learn about the tools, technology and processes used to influence manufacturing practices. 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-Hour and Microsoft Word.

Manufacturing Engineering Technology I

In this course, 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. Course studies will include 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. Professional employability skills like teamwork, communication, safety and portfolios will be a key element in this course. Microsoft and advanced industry certifications may be earned.

Manufacturing Engineering Technology II

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 will include using mathematical processes to analyze mathematical relationships, communicate ideas, and justify mathematical ideas/arguments using precise language in both written and oral communication. Microsoft and advanced industry certifications may be earned.

Practicum in Manufacturing

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 for the course. Certifications may be earned in OSHA 30-Hour and advanced industry based certifications.

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. Certifications will be earned in Microsoft and industry based certifications.

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. they relate to IT. Certifications will be earned in Microsoft and industry based certifications.

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. Certifications will be earned in Microsoft and industry based certifications.

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. Certifications will be earned in Microsoft and industry based certifications.

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. Certifications will be earned in Microsoft and industry based certifications.

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

Science, Technology, Engineering, and Mathematics

- Programming and Software Development
- STEM Academy

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.

Computer Science III

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 will include TechSmart and incorporate HTML/CSS. Certifications will be earned in Microsoft Office and industry based certifications.

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. Certifications will be earned in Microsoft Excel Expert and advanced industry based certification.

OR

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. Certifications will be earned in Microsoft Excel Expert and advanced industry based certifications.

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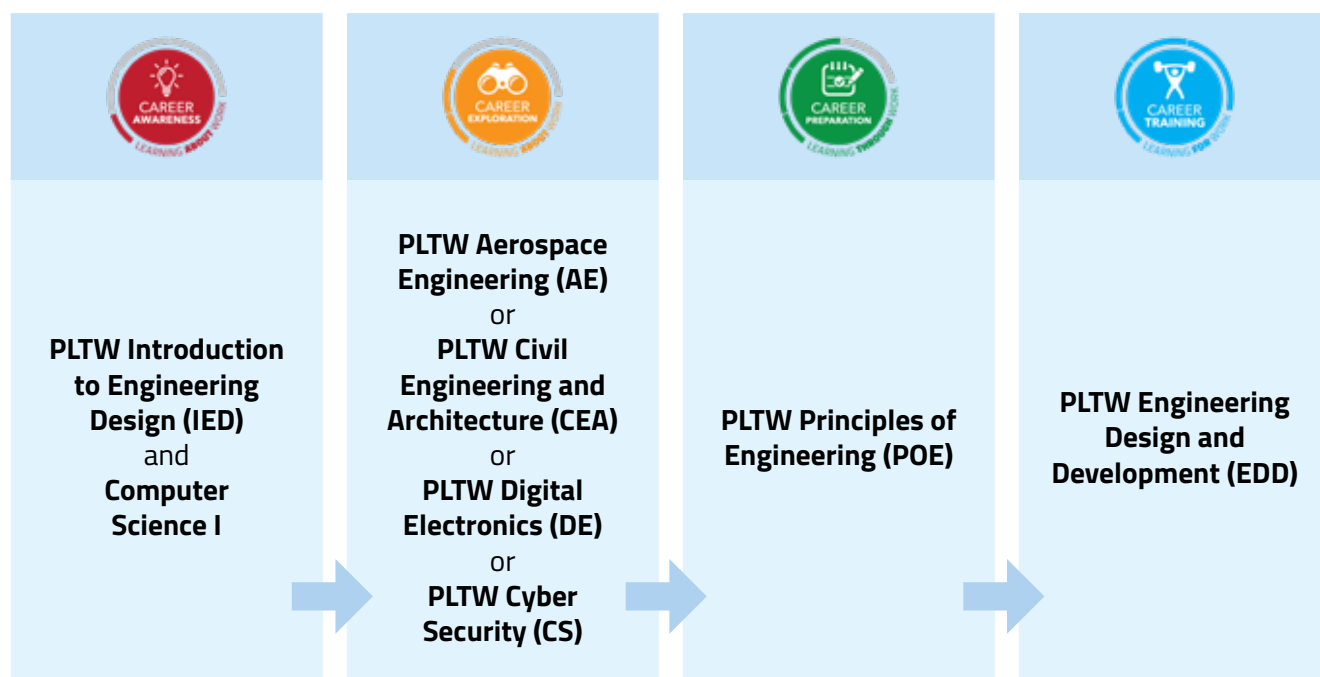
STEM Academy

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

(Located at Northwest High School)

PROJECT LEAD THE WAY (PLTW) ACADEMY COURSES

PLTW Introduction to Engineering Design (IED) and **Computer Science I**	**PLTW Aerospace Engineering (AE)** or **PLTW Civil Engineering and Architecture (CEA)** or **PLTW Digital Electronics (DE)** or **PLTW Cyber Security (CS)**	**PLTW Principles of Engineering (POE)**	**PLTW Engineering Design and Development (EDD)**

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

- **10** 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** Project-Based Research

Check out our STEM Academy video on YouTube to learn more!
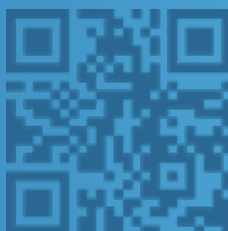
Transportation, Distribution, and Logistics
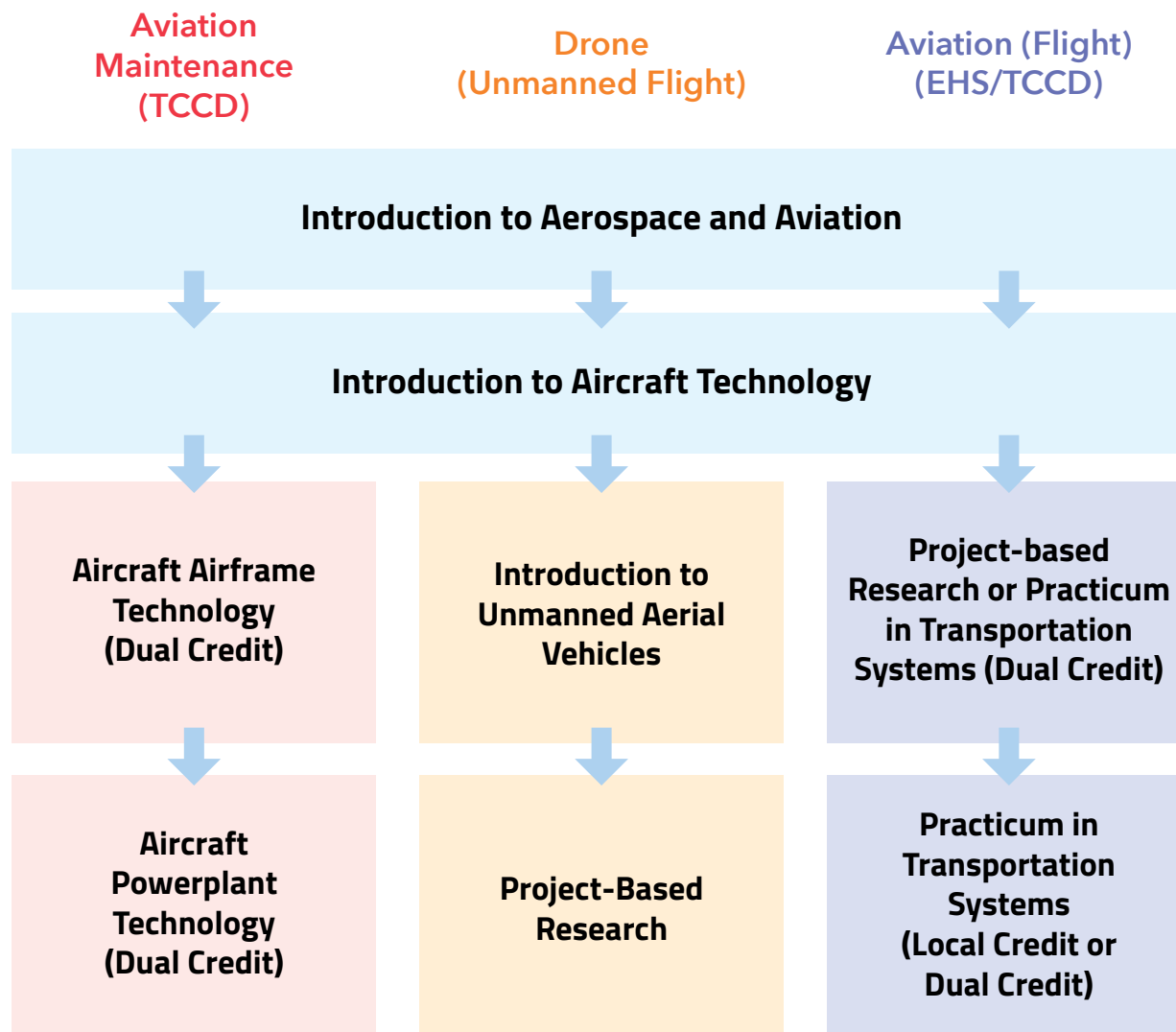
- Aviation and Aeronautics Academy

Aviation and Aeronautics Academy

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

(Located at V.R. Eaton High School)

COURSE SEQUENCES

Aviation Maintenance (TCCD)	Drone (Unmanned Flight)	Aviation (Flight) (EHS/TCCD)

Introduction to Aerospace and Aviation

⬇ ⬇ ⬇

Introduction to Aircraft Technology

⬇ ⬇ ⬇

Aircraft Airframe Technology (Dual Credit)	**Introduction to Unmanned Aerial Vehicles**	**Project-based Research or Practicum in Transportation Systems (Dual Credit)**

⬇ ⬇ ⬇

Aircraft Powerplant Technology (Dual Credit)	**Project-Based Research**	**Practicum in Transportation Systems (Local Credit or Dual Credit)**

*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!

AVIATION & AERONAUTICS ACADEMY
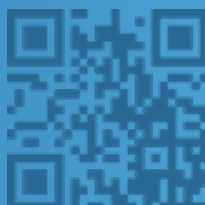
A BIG THANKS TO ALL OUR 2021-2022 INTERNSHIP PARTNERS!

Check out our YouTube Channel to learn more about the Internship Program!

40

Want more info?

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nisdtx.org/cte

FOLLOW US ON SOCIAL MEDIA
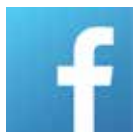
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