



Red Oak Independent School District

CAREER & TECHNOLOGY EDUCATION

Academic Skills | Professional Career Skills | 21st Century Work Skills

Students entering high school in 2017-2018 or later graduate on the Foundation High School Program with an Endorsement. In order for a student to receive a CTE endorsement, they must successfully complete a coherent sequence of 3 or more courses for 4 or more credits within that endorsement area while observing all prerequisites; the last course within the sequence must be an advanced course. Below is a list of the Endorsements available through Red Oak ISD Career and Technology Education Clusters.

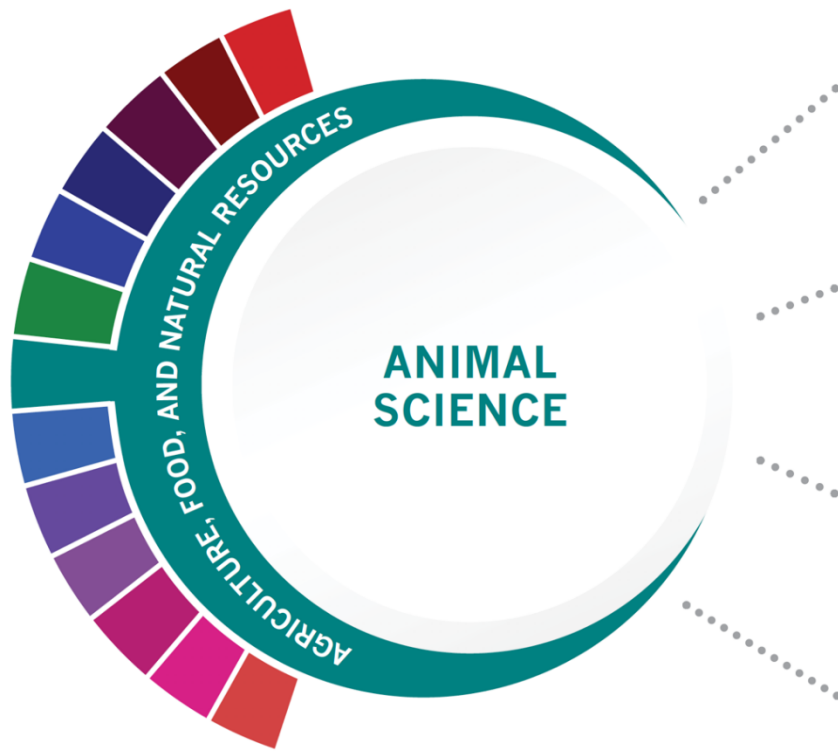
Business & Industry Endorsement	Public Services Endorsement	Science, Technology, Engineering, and Math (STEM)
Agriculture	Education	<u>PLTW Engineering</u>
Architecture	Health Science	Cybersecurity
Construction	Human Services	Programming
Arts, A/V Technology, and Communication	Law, Public Safety, Corrections, and Security	
Business, Finance, and Marketing		
Information Technology		
Manufacturing		
Transportation, Distribution, and Logistics		

Red Oak ISD CTE courses provide students the opportunity to earn industry-recognized certifications. These certifications demonstrate to prospective employers students have the knowledge and skills to enter a specific career field. Currently, the following certifications are offered at Red Oak ISD.

CTE Programs of Study	Industry Certifications Offered
Animal Science	Certified Veterinary Assistant
Applied Agricultural Engineering	AWS D1.1 and AWS D9.1
Architecture	Auto Cad and/or Auto Revit
Carpentry	OSHA 30
Electrical	Electrical Apprenticeship
Design & Multimedia Arts	Adobe Photoshop and Adobe Illustrator
Digital Communications	Adobe Photoshop and Adobe Premier Pro
Accounting and Financial Services	Certified Insurance Service Representative
Business Management	MOS Word, MOS Word Expert, MOS Word Master, MOS Excel, MOS Excel Expert
Teaching and Training	Educational Aide 1
Healthcare Diagnostics	Certified EKG Technician and Certified Patient Care Technician
Healthcare Therapeutic	Certified Pharmacy Tech
Health Informatics	Level 2 Certificate from TSTC
Cosmetology	Cosmetology Operators License
Networking Systems	Comp Tia+ and/or MOs Technology Associate
Web Development	Certified Web Design and/or MOS Technology Associate
Law Enforcement	Emergency Telecommunicator
Emergency Services	EMT-Basic through Navarro College
Welding	AWS D1.1 and AWS D9.1
Cybersecurity	CCNA Cyber Ops
Programming and Software Development	MOS Introduction to Programming Using Java Script, MOS Introduction to Programming Using Python, and MOS Introduction to Programming Using HTML & CSS
Automotive	ASE Brakes, ASE Electrical/Electronic Systems, ASE Engine Performance, ASE Engine Repair, ASE Maintenance & Light Repair, ASE Steering & Suspension
Diesel and Heavy Equipment	Level 1 Certification from TSTC



The Agriculture, Food, and Natural Resources (AFNR) Career Cluster focuses on essential elements of life—food, water, land, and air. This career cluster includes a diverse spectrum of occupations, ranging from farmer, rancher, and veterinarian to geologist, land conservations, and florist. It also includes non-traditional agricultural occupations like wind energy, solar energy, and oil and gas



9 th Grade	Principles of Agriculture, Food, and Natural Resources (1)
10 th Grade	Small Animal Management (0.5) and Livestock Production (1)
11 th Grade	Veterinary Medical Applications * (1)
12 th Grade	Practicum in Agriculture, Food, and Natural Resources* (2)

The Animal Science program of study focuses on the science, research, and business of animals and other living organisms. It teaches CTE learners how to apply biology and life science to real-world life processes of animals and wildlife, either in laboratories or in the field, which could include a veterinary office, a farm or ranch, or any outdoor area harboring animal life. Students may also research and analyze the growth and destruction of species and research or diagnose diseases and injuries of animals. Successful completion of the Animal Science program of study will fulfill requirements of a Business and Industry endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Licensed Veterinary Technician	Pet Groomer	Food Science and Technology	Animal Sciences	Genetics
Feed yard Technician in Cattle Care and Handling	Veterinary Technician	Veterinary Studies	Agriculture	Veterinary Medicine
Certified Veterinary Assistant	Licensed Breeder	Biotechnology Laboratory Technician	Biology	Biological and Physical Sciences
		Biology Technician	Zoology/Animal Biology	Biological and Biomedical Sciences

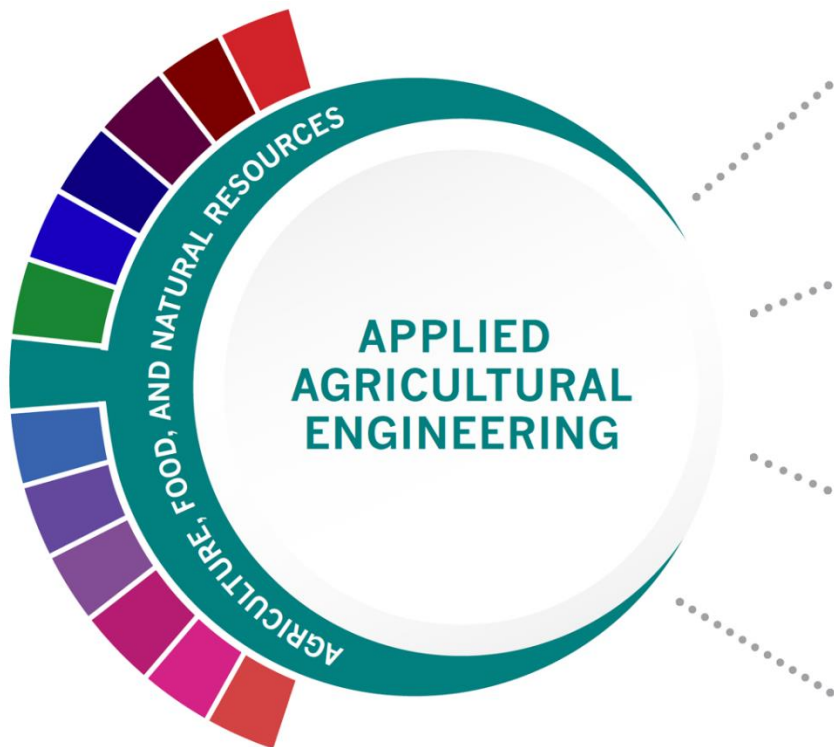
Occupations	Median Wage	Annual Openings	% Growth
Animal Breeders	\$39,135	28	9%
Animal Scientists	\$57,533	22	12%
Medical Scientists	\$63,898	435	27%
Veterinarians	\$93,496	294	24%
Zoologists and Wildlife Biologists	\$67,309	45	32%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES	
Exploration Activities:	Work Based Learning Activities:
Texas FFA	Agri-Science Fair 4H Volunteer at a local farm or veterinary office FFA Supervised Agriculture Experience (SAE)

Student Certification Offered at ROHS:
Certified Veterinary Assistant



The Agriculture, Food, and Natural Resources (AFNR) Career Cluster focuses on essential elements of life—food, water, land, and air. This career cluster includes a diverse spectrum of occupations, ranging from farmer, rancher, and veterinarian to geologist, land conservations, and florist. It also includes non-traditional agricultural occupations like wind energy, solar energy, and oil and gas



9th Grade	Introduction to Welding* (1)
10th Grade	Agricultural Mechanics and Metal Technologies* (1)
11th Grade	Agricultural Structures Design and Fabrications* (1)
12th Grade	Agricultural Equipment Design and Fabrication/Lab* (2)

The Applied Agricultural Engineering program of study explores the occupations and educational opportunities associated with applying knowledge of engineering technology and biological science to agricultural problems concerned with power and machinery, electrification, structures, soil and water conservation, and processing agricultural products. This program of study may also include exploration into diagnosing, repairing, or overhauling farm machinery and vehicles, such as tractors, harvesters, dairy equipment, and irrigation systems. Successful completion of the Applied Agricultural Engineering program of study will fulfill requirements of a Business and Industry endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
OSHA 30 Hour General Industry	Certified Professional Agronomist	Heavy Equipment Maintenance Technology/ Technician	Agricultural Engineering	Agricultural Engineering
Feed yard Technician in Machinery, Operation, Repair and Maintenance	Certified Reliability Engineer	Agricultural Mechanization, General	Agricultural Mechanization, General	Agricultural Mechanization, General
AWS SENSE Welding Level 1	Certified Irrigation Designer	Small Engine Mechanics and Repair Technology/ Technician		
AWS D1.1 or D9.1 Certification	Fluid Power Mobile Hydraulic Mechanic	Welding Technology/ Welder		

Occupations	Median Wage	Annual Openings	% Growth
Outdoor Power Equipment and Other Small Engine Mechanics	\$32,406	366	16%
Welders	\$41,350	6,171	9%
Farm Equipment Mechanics and Service Technicians	\$39,915	304	17%
Mobile Heavy Equipment Mechanics	\$47,299	1,627	16%
Agricultural Engineers	\$64,792	9	13%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

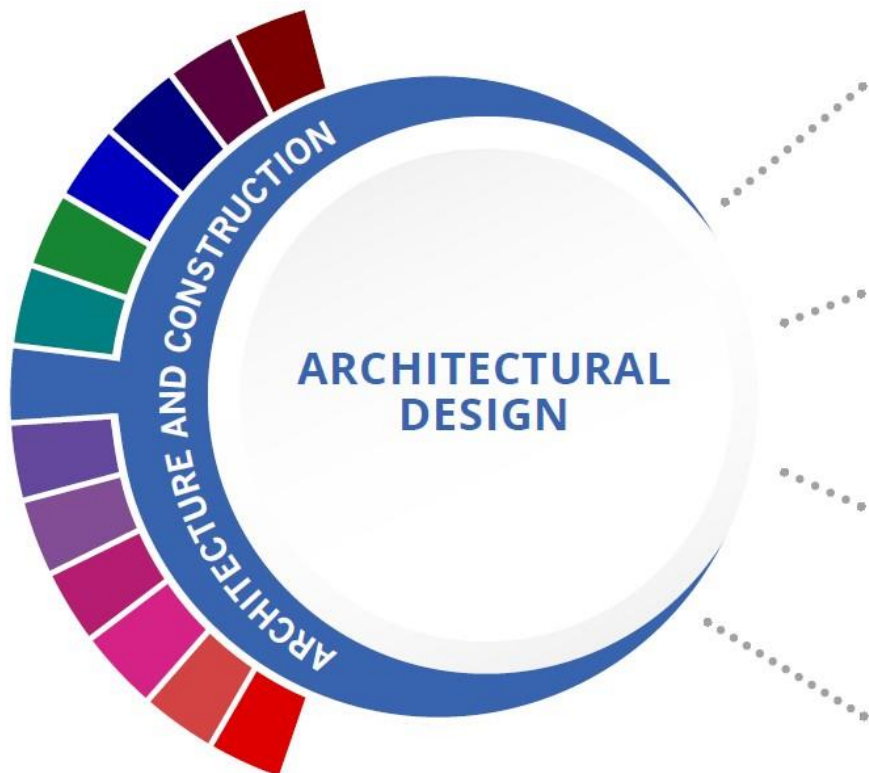
Exploration Activities:	Activities:
Tour a farm products or machinery plant Texas FFA	Earn a welding certification Intern at a farm products or machinery plant FFA Supervised Agriculture Experience (SAE)

Student Certifications offered at ROHS:

AWS D1.1 and AWS D9.1



The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment. The principles class provides an overview of the designing and building career fields.



9th Grade	Principles of Construction (1)
10th Grade	Architectural Design I* (1)
11th Grade	Architectural Design II* (2)
12th Grade	Dual Credit Practicum of Architecture^ (2)

The Architectural Design program of study explores the occupations and educational opportunities associated with developing engineering and designing building structures and facilities. This program of study may also include exploration into collecting and interpreting geographic information, researching and preparing maps, and interior design. Successful completion of the Architectural Design program of study will fulfill requirements of a Business and Industry endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Autodesk Certified Professional or User in AutoCAD	Certified Photogrammetric Technologist	Architecture	Architecture	Architecture
Autodesk Certified Professional or User in AutoCAD Civil 3D	Certified Development, Design & Construction Professional	Interior Design	Interior Design	Interior Architecture
Autodesk Certified Professional or User in Autodesk Revit Architecture	National Council Certified Interior Designer	Civil Engineering, General	Civil Engineering, General	Civil Engineering, General
Autodesk Certified Professional or User in Autodesk Revit MEP Electrical	LEED AP Building Design & Construction	Geographic Information Science and Cartography	Geographic Information Science and Cartography	Geographic Information Science and Cartography

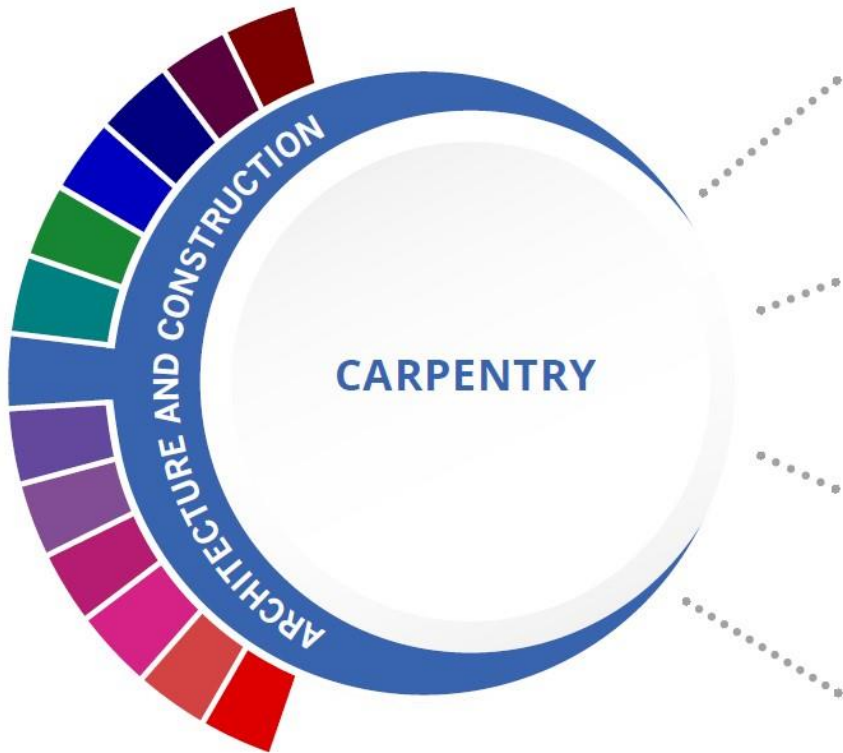
Occupations	Median Wage	Annual Openings	% Growth
Architects	\$77,043	808	16%
Geographic Information Analysts and Surveyors	\$58,926	162	27%
Architectural/ Civil Drafters	\$50,170	1,068	9%
Construction Managers	\$87,402	2,401	14%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES	
Exploration Activities: Shadow an architect, interior designer, or civil engineer. SkillsUSA	Work Based Learning Activities: Intern at an architecture firm.

Student Certifications offered at ROHS:
Auto Cad and/or Auto Revit



The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment. The principles class provides an overview of the designing and building career fields.



9th Grade	Principles of Construction (1)
10th Grade	Construction Technology I* (2)
11th Grade	Construction Technology II* (2)
12th Grade	Dual Credit Practicum in Construction Technology* (2)

The Carpentry program of study explores the occupations and educational opportunities related to constructing, installing, or repairing structures and fixtures made of wood, such as concrete forms (including frameworks, platforms, joists, studding, rafters, and stairways). This program of study may also include exploration into installing, dismantling, or moving machinery and heavy equipment according to layout plans, blueprints, or other drawings. Successful completion of the Carpentry program of study will fulfill requirements of a Business and Industry endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
NCCER Carpentry, Level 1 & 2	Certified Lead Carpenter	Carpentry/ Carpenter	Construction Science	Construction Management
NCCER Commercial Carpenter	Certified Installer	Industrial Mechanics and Maintenance Technology		
NCCER Core Curriculum	Certified Door Consultant			
NCCER Construction Technology	Fluid Power Connector and Conductor			

Occupations	Median Wage	Annual Openings	% Growth
Carpenters	\$35,922	5,031	26%
Cost Estimators	\$63,939	2,239	21%

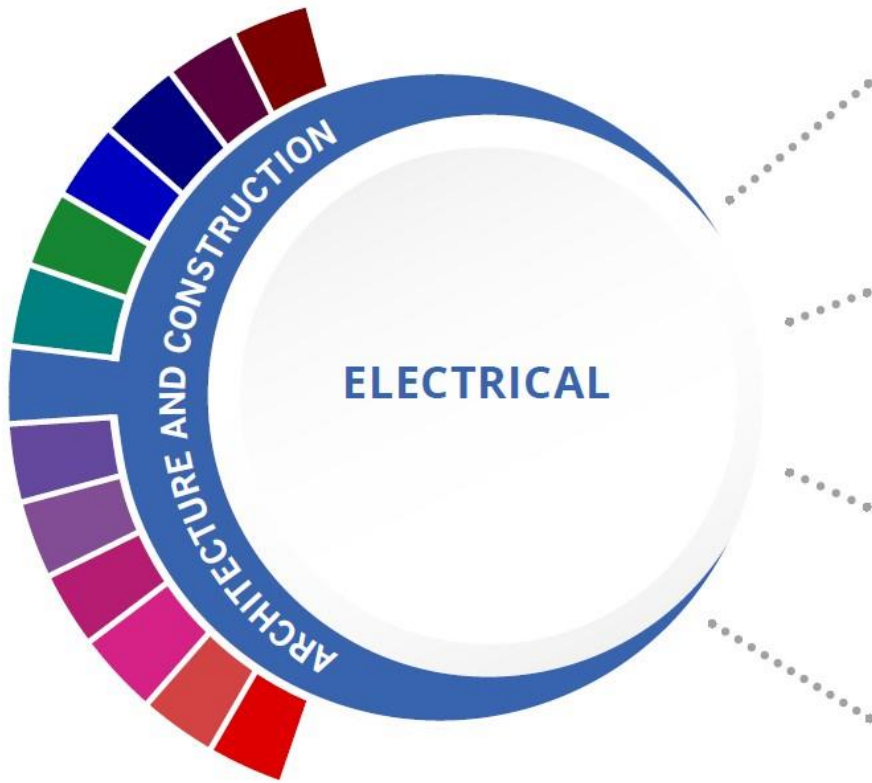
WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES	
Exploration Activities:	Work Based Learning Activities:
Shadow a carpenter or millwright. SkillsUSA	Obtain an NCCER certification in Millwright Level 1 or Carpentry Level 1

Student Certifications offered at ROHS:

OSHA 30



The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment. The principles class provides an overview of the designing and building career fields.



9th Grade	Principles of Construction (1)
10th Grade	Dual Credit Electrical Technology I* (2)
11th Grade	Dual Credit Electrical Technology II* (2)
12th Grade	Dual Credit Practicum in Construction Technology* (2)

The Electrical program of study explores the occupations and educational opportunities associated with installing, maintaining, and repairing electrical wiring, equipment, and fixtures. This program of study may also include exploration into installing and repairing telecommunications cable including fiber optics. **Successful completion of the Electrical program of study will fulfill requirements of a Business and Industry endorsement.** Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE/	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
NCCER Electrical, Level 1 & 2	Electrical Plans Examiner	Electrician	Construction Science	Construction Management
NCCER Electronic Systems Technician, Level 1 & 2	Certified Electrical Inspector - Master	Communications Systems Installation and Repair Technology		
Electrical Apprenticeship Certificate, Level 1	Fiber Optics Technician - Outside Plant			
NCCER Commercial Electrician	Certification in Fire Alarm Systems - Level 1			

Occupations	Median Wage	Annual Openings	% Growth
Electrical Linemen	\$54,184	1,314	28%
Electricians	\$44,013	8,460	21%
Electrical and Electronics Installers	\$37,544	245	19%
Security and Fire Alarm Installers	\$43,638	1,112	22%
Telecommunication Line Installers and Repairers	\$49,150	1,228	10%

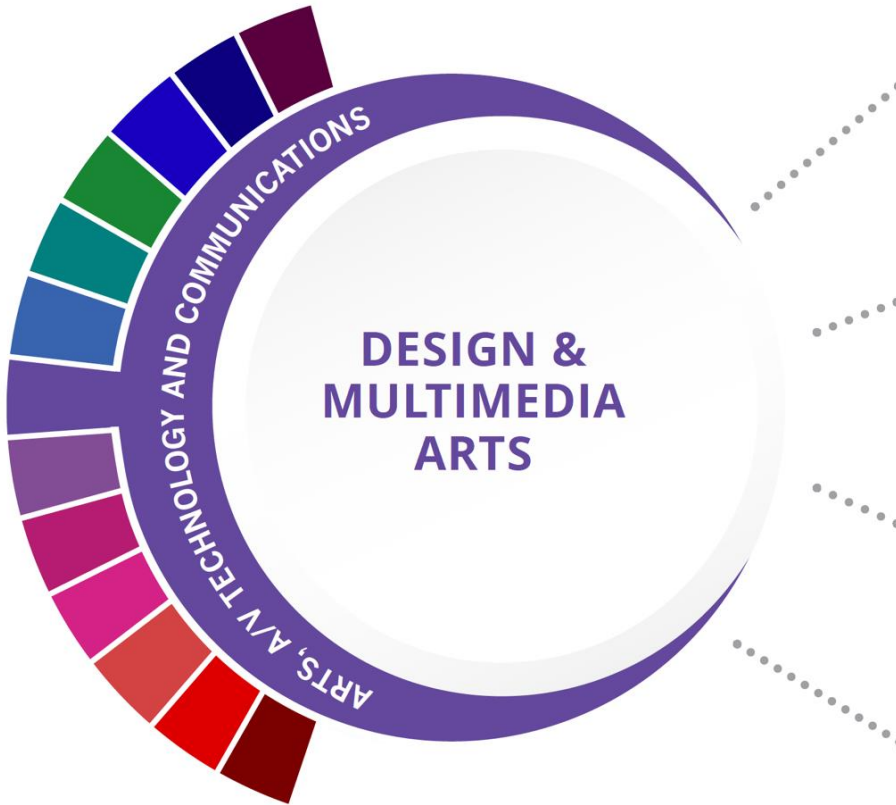
WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES	
Exploration Activities:	Work Based Learning Activities:
Shadow an electrician or fiber optics line installer SkillsUSA	Intern or shadow an electrician

Student Certifications offered at ROHS:
Electrical Apprenticeship Certificate





The Arts A/V Technology and Communications (AAVTC) Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services. Careers in the AAVTC career cluster require a creative aptitude, a strong background in computer and technology applications, a strong academic foundation, and a proficiency in oral and written communications.



9th Grade	Principles of Arts, A/V Technology, and Communications (1)
10th Grade	Graphic Design and Illustration I (1) OR Animation I (1)
11th Grade	Graphic Design and Illustration II/Lab* (2)
12th Grade	Practicum in Graphic Design and Illustration* (2)

The Design and Multimedia Arts program of study explores the occupations and educational opportunities associated with designing or creating graphics to meet specific commercial or promotional needs, such as packaging, displays or logos. This program of study may also include exploration into designing clothing and accessories, and creating special effects, animation, or other visual images using film, video, computers, or other electronic tools and media, for use in computer games, movies, music videos, and commercials. **Successful completion of the Design and Multimedia Arts program of study will fulfill requirements of a Business and Industry endorsement.** Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Adobe Certified Associate Certifications	Certified Digital Designer	Animation, Interactive Technology, Video Graphics and Special Effects	Animation, Interactive Technology, Video Graphics and Special Effects	Animation, Interactive Technology, Video Graphics and Special Effects
Adobe Certified Expert Certifications	WOW Certified Web Designer Apprentice	Graphic Design	Graphic Design	Graphic Design
Apple Logic Pro X	Adobe Suite Certifications	Game and Interactive Media Design	Game and Interactive Media Design	Intermedia/Multimedia

Occupations	Median Wage	Annual Openings	% Growth
Graphic Designers	\$44,824	1,433	15%
Multimedia Artists and Animators	\$67,392	186	21%

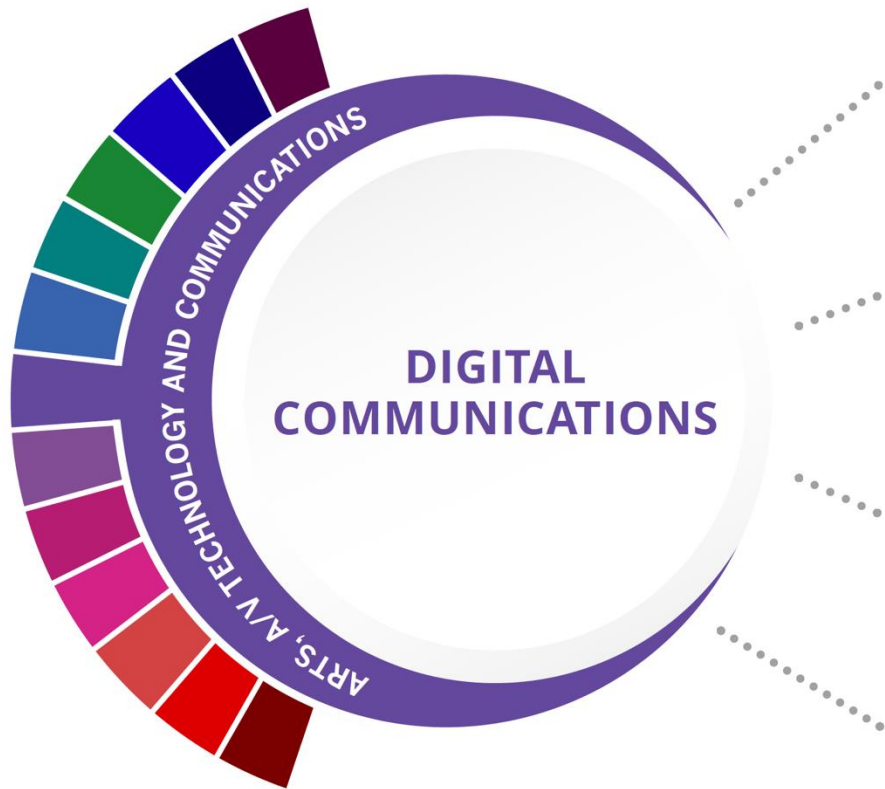
WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES	
Exploration Activities:	Work Based Learning Activities:
Join a website development or coding club. Participate in SkillsUSA or TSA	Intern with a multimedia or animation studio. Obtain a certificate or certification in graphic design.

Student Certifications offered at ROHS:
Adobe Photoshop and Adobe Illustrator





The Arts A/V Technology and Communications (AAVTC) Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services. Careers in the AAVTC career cluster require a creative aptitude, a strong background in computer and technology applications, a strong academic foundation, and a proficiency in oral and written communications.



9th Grade	Principles of Arts, A/V Technology, and Communications (1) AND Professional Communications (0.5)
10th Grade	Audio/Video Production I (1)
11th Grade	Audio Video Production II/Lab* (2)
12th Grade	Practicum of Audio/Video Production* (2)

The Digital Communications program of study explores the occupations and educational opportunities associated with the production of audio and visual media formats for various purposes, such as TV broadcasts, advertising, video production, or motion pictures. This program of study may also include exploration into operating machines and equipment to record sound and images such as microphones, sound speakers, video screens, projectors, video monitors, sound and mixing boards, and related electronic equipment. **Successful completion of the Digital Communications program of study will fulfill requirements of a Business and Industry endorsement.** Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Apple Final Cut Pro X	Certified Video Engineer	Recording Arts Technology/Technician	Recording Arts Technology/Technician	Communications Technology/Technician
Apple Logic Pro X	Commercial Audio Technician	Cinematography and Film/Video Production	Cinematography and Film/Video Production	Cinematography and Film/Video Production
Adobe Certified Associate Premiere Pro	Certified AM Directional Specialist	Radio and Television Broadcasting Technology/Technician	Radio and Television	Radio and Television
Adobe Certified Associate Certifications	Certified Broadcast Radio Engineer	Music Technology	Agricultural Communication/Journalism	Agricultural Communication/Journalism

Occupations	Median Wage	Annual Openings	% Growth
Sound Engineering Technicians	\$39,562	79	27%
Camera Operators, Television, Video and Motion Picture	\$50,024	129	9%
Audio and Video Equipment Technicians	\$40,581	757	29%
Film and Video Editors	\$47,382	118	23%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Shadow a production team Participate in SkillsUSA or TSA	Intern at a local television station or video production company Work with a local company on a project

Student Certifications offered at ROHS:

Adobe Photoshop and Adobe Premier Pro



The Business, Marketing, and Finance Career Cluster focuses on careers in planning, organizing, directing, and evaluating business functions essential to efficient and productive business operations.



9th Grade Business Information Management I (1)

10th Grade Accounting I (1)

11th Grade Insurance Operations* (1)

12th Grade Practicum in Business Management* (2)

The Accounting and Financial Services program of study teaches CTE learners how to examine, analyze, and interpret financial records. Through this program of study students will learn the skills necessary to perform financial services, prepare financial statements, interpret accounting records, give advice, or audit and evaluate statements prepared by others. This program of study will also introduce student to mathematical modeling tools. Successful completion of the Accounting and Financial Services program of study will fulfill requirements of a Business and Industry endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
QuickBooks Certified User	Certified Management Accountant	Real Estate	Accounting	Financial Accounting
Microsoft Office Specialist or Expert - Excel	Certified Internal Auditor	Financial, General	Financial, General	Business Administration
Certified Insurance Service Representative	Certified Income Specialist	Financial Planning and Services]	Financial Planning and Services]	Financial Planning
	Certified Public Accountant	Certified Income Specialist	Certified Income Specialist	

Occupations	Median Wage	Annual Openings	% Growth
Accountants and Auditors	\$71,469	14,436	22%
Loan Officers	\$68,598	2,419	19%
Personal Financial Advisors	\$86,965	1,861	52%
Administrative Service Managers	\$96,138	2,277	21%
Insurance Underwriters	\$66,206	594	14%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Business Professionals of America (BPA) Future Business Leaders of America (FBLA) DECA	Internship with local accounting firm Microsoft Office Specialist (MOS) certifications

Student Certifications offered at ROHS:

Certified Insurance Service Representative



The Business, Marketing, and Finance Career Cluster focuses on careers in planning, organizing, directing, and evaluating business functions essential to efficient and productive business operations.



9th Grade	Business Information Management I (1)
10th Grade	Business Information Management II/Lab* (1)
11th Grade	Virtual Business (0.5) AND Global Business (0.5)
12th Grade	Practicum in Entrepreneurship* (2)

The Business Management program of study teaches CTE learners how to plan, direct, and coordinate the administrative services and operations of an organization. Through this program of study students will learn the skills necessary to formulate policies, manage daily operations, and allocate the use of materials and human resources. This program of study will also introduce students to mathematical modeling tools and organizational evaluation methods. Successful completion of the Business Management program of study will fulfill requirements of a Business and Industry endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE / LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Microsoft Office Specialist or Expert- Excel	Certified Records Manager	Business Administration	Business Administration	Business Administration
Microsoft Office Specialist or Expert - Word	Certified Facility Manager	Business/Commerce	Business/Commerce	Business Management
Google Cloud Certified Professional – G-Suite	Certified Commercial Contracts Manager	Public Administration	Public Administration	Public Administration
Certified Associate in Project Management	Teradata 14 Basics/ Certified Technical Specialist	Business Management	Management Science	Management Science

Occupations	Median Wage	Annual Openings	% Growth
Administrative Service Managers	\$96,138	2,277	21%
Management Analysts	\$87,651	4,706	32%
General and Operations Managers	\$107,640	18,679	20%
Operations Research Analysts	\$78,083	1,128	38%
Supervisors of Administrative Support Workers	\$57,616	14,982	20%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

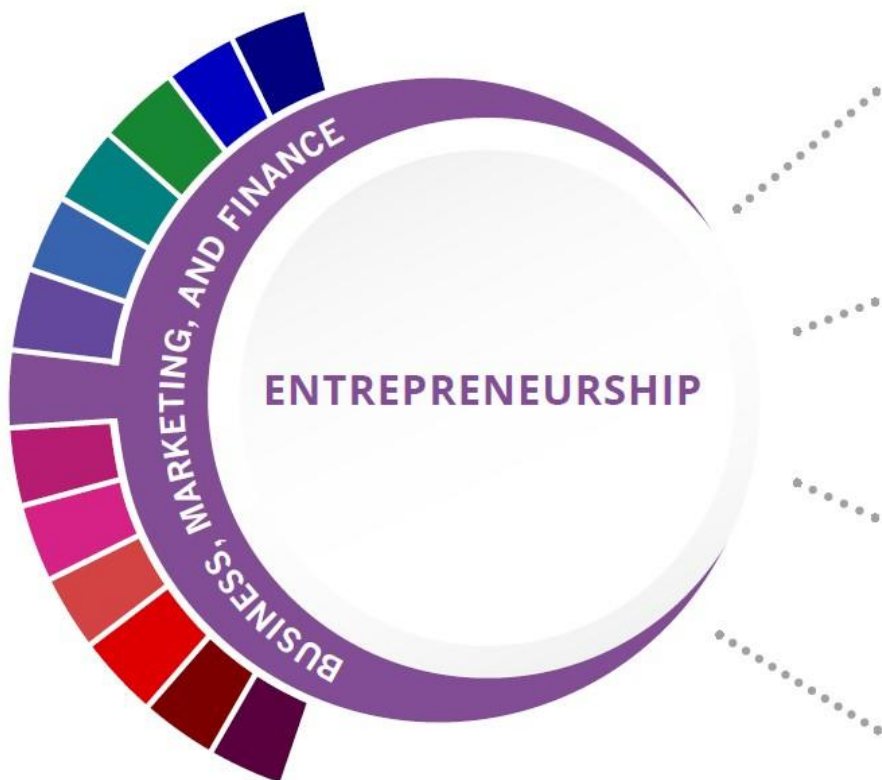
Exploration Activities:	Work Based Learning Activities:
Business Professional of America (BPA), Future Business Leaders of America (FBLA), and DECA	Internship with local business or Chamber of Commerce

Student Certifications offered at ROHS:

MOS Word, MOS Word Expert, MOS Word Master, MOS Excel, and MOS Excel Expert



The Business, Marketing, and Finance Career Cluster focuses on careers in planning, organizing, directing, and evaluating business functions essential to efficient and productive business operations.



9th Grade	Business Information Management I (1)
10th Grade	Entrepreneurship I (1)
11th Grade	Entrepreneurship II* (1)
12th Grade	Practicum in Entrepreneurship* (2)

The Entrepreneurship program of study teaches CTE learners how to plan, direct, and coordinate the management and operations of public or private sector organizations. Through this program of study students will learn the skills necessary to formulate policies, manage daily operations, analyze management structures, and plan for the use of materials and human resources. Successful completion of the Entrepreneurship program of study will fulfill requirements of a Business and Industry endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Microsoft Office Expert - Excel	Certified Facility Manager	Business Administration and Management	Business Administration and Management	Business Administration and Management
Microsoft Office Expert - Word	Certified Management Accountant	Business/Commerce	Business/Commerce	Business/Commerce
Entrepreneurship and Small Business	Certified Project Consultant	Public Administration	Public Administration	Public Administration
	Accredited Management Consultant	Business Management	Management Science	Management Science

Occupations	Median Wage	Annual Openings	% Growth
General and Operations Managers	\$107,640	18,679	20%
Management Analysts	\$87,651	4,706	32%
Managers, All Others	\$113,110	1,794	26%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Business Professionals of America (BPA) Future Leaders of America (FBLA) DECA	Internship with local management consulting firm



The Education and Training Career Cluster focuses on planning, managing, and providing education and training services and related learning support services. All parts of courses are designed to introduce learners to the various careers available within the Education and Training career cluster.



9th Grade	Principles of Human Services (1)
10th Grade	Human Growth and Development (1)
11th Grade	Instructional Practices* (2)
12th Grade	Practicum in Education and Training* (2)

The Teaching and Training program of study prepares CTE learners for careers related to teaching, instruction, and creation of instructional and enrichment materials. The program of study introduces CTE learners to a wide variety of student groups and their corresponding needs. It familiarizes them with the processes for developing curriculum, coordinating educational content, and coaching groups and individuals. Successful completion of the Teaching and Training program of study will fulfill requirements of a Public Services endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Educational Aide I	Texas Educator Certification Program	Teacher Education	Bilingual and Multilingual Education	Instruction and Learning
	Educational Instructional Technology	Education, General (or specific subject area)	Education, General (or specific subject area)	Educational Leadership and Administration, General
	Counselor, Professional	Special Education	Special Education	Special Education
	Athletic Trainer	Health and Physical Education/Fitness	Health and Physical Education/Fitness	Social and Philosophical Foundations of Education

Occupations	Median Wage	Annual Openings	% Growth
Adult Basic and Secondary Education and Literacy Teachers and Instructors	\$48,069	862	17%
Middle School Teachers, Except Special and Career/ Technical Education	\$54,510	6,407	15%
Career and Technical Education Teachers, Secondary School	\$56,360	719	9%
Special Education Teachers, Secondary School	\$56,720	980	18%

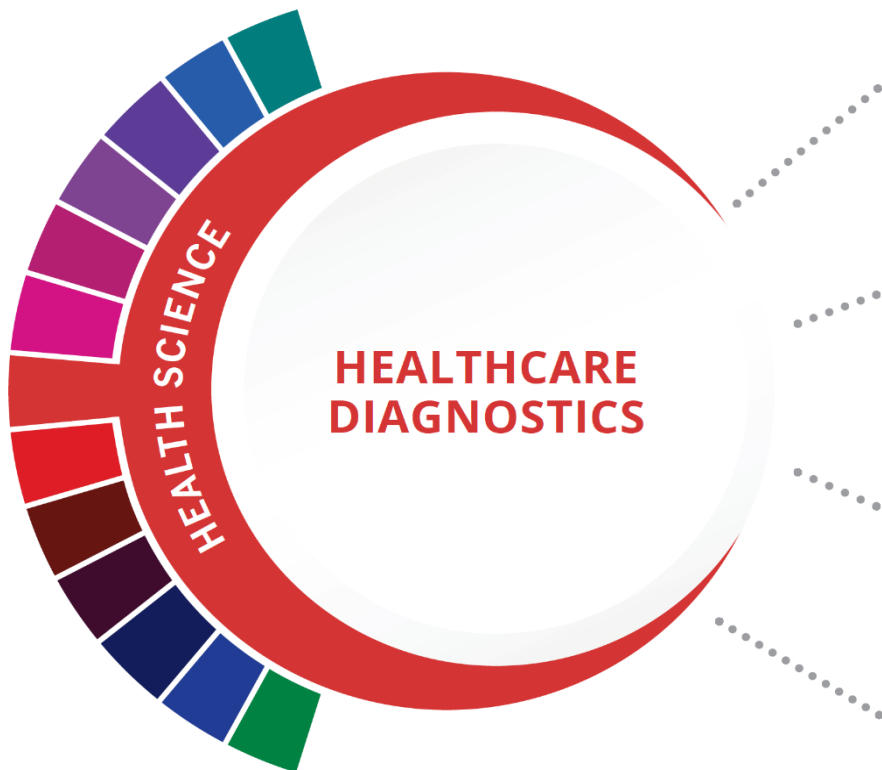
WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Student Certifications offered at ROHS:
Educational Aide 1

Exploration Activities:	Work Based Learning Activities:
Texas Association of Future Educators, or Family, Career and Community Leaders of America	Teach a community education class; intern as a teaching assistant or tutor; serve as a camp counselor.



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



9th Grade	Medical Terminology (1)
10th Grade	Medical Microbiology* (1) AND Pathophysiology* (1)
11th Grade	Health Science Theory/Health Science Clinical* (1) AND Anatomy and Physiology* (1)
12th Grade	Mathematics for Medical Professionals* (1) AND Practicum in Health Science* (2)

The Healthcare Diagnostic program of study introduces students to occupations and education opportunities related to performing complex medical laboratory tests for the diagnosis, treatment, and prevention of disease. This program of study may also include exploration into the opportunities associated with blood laboratories as well as radiologic technology and ultrasound technology. Successful completion of the Healthcare Diagnostics program of study will fulfill requirements of a Public Services endorsement. Courses with an * have prerequisites that must be met to take this course.

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

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

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

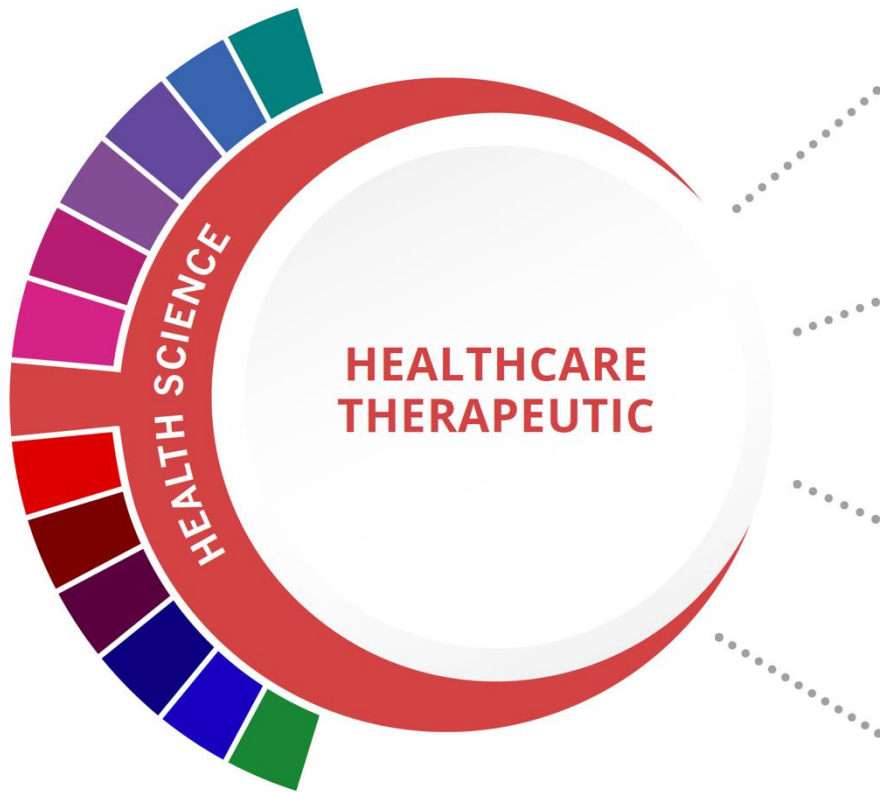
Exploration Activities:	Work Based Learning Activities:
Health Occupation Students of America (HOSA)	Clinical rotations at a community wellness center, hospital, assisted living, nursing home

Student Certifications offered at ROHS:

- Certified EKG Technician and
- Certified Patient Care Technician



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



9th Grade Medical Terminology (1)

10th Grade Medical Microbiology* (1)

11th Grade Pharmacy I* (1)

12th Grade Pharmacology* (1)

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. Successful completion of the Healthcare Therapeutic program of study will fulfill requirements of a Public Services endorsement. Courses with an * have prerequisites that must be met to take this course.

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

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

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

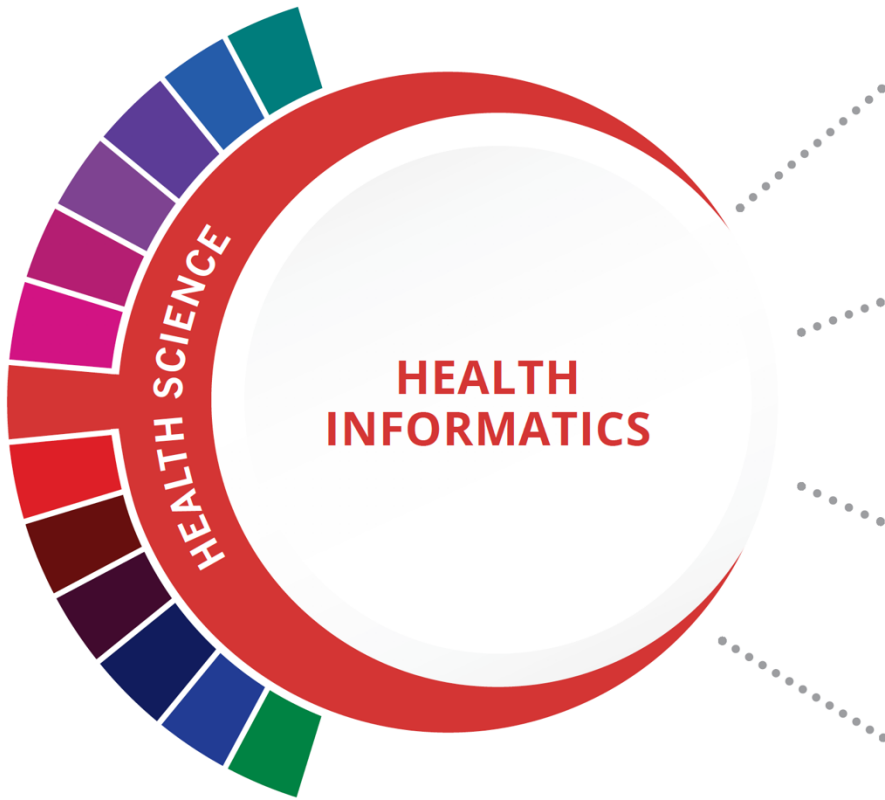
Exploration Activities:	Work Based Learning Activities:
SkillsUSA Health Occupation Students of America (HOSA)	Volunteer at a community wellness center, hospital, assisted living, or nursing home.

Student Certifications offered at ROHS:

Certified Pharmacy Tech



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



9th Grade	Dual Credit Business Information Management I* (1)
10th Grade	Dual Credit Medical Terminology* (1) AND Dual Credit Pathophysiology* (1) AND Dual Credit Health Informatics* (1)
11th Grade	Dual Credit Project-Based Research* (1) AND Dual Credit Anatomy and Physiology* (1)
12th Grade	Dual Credit Healthcare Information Systems and Management* (TBD) AND Dual Credit Project-Based Research* (1)

The Healthcare Informatics program of study focuses on exposing students to the management and use of patient information in the healthcare field. Students may learn about and research recent modifications of computerized healthcare and the process of creating and maintaining hospital and patient records in accordance with regulatory requirements of the healthcare system. Students may also practice writing and interpreting medical reports. Successful completion of the Health Informatics program of study will fulfill requirements of a Public Services endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Certified Coding Associate	Certified Professional in Informatics	Health Information/Medical Records Technology/Technician	Medical and Health Service Managers	Medical and Health Service Managers
Medical Coding and Billing Specialist	Medical Transcriptionist			

Occupations	Median Wage	Annual Openings	% Growth
Medical Records and Health Information Technicians	\$35,922	1,588	24%
Medical and Health Service Managers	\$93,995	2,562	29%
Billing and Posting Clerks	\$35,485	5,775	25%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

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

Student Certifications offered at ROHS:

Level 2 Certificate from TSTC



The Human Services Career Cluster focuses on preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care services, and consumer services.



9th Grade	Principles of Human Services (1)
10th Grade	Lifetime Nutrition and Wellness (0.5)
11th Grade	Counseling and Mental Health (1)
12th Grade	Family and Community Services (1)

The Family and Community Services program of study introduces students to knowledge and skills related to social services, including child and human development and consumer sciences. CTE learners may learn about or practice managing social and community services or teaching family and consumer sciences. Students may follow career paths in social work or therapy for children, families, or school communities. Successful completion of the Family and Community Services program of study will fulfill requirements of a Public Services endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Community Health Worker	Human Development and Family Studies	Human Development and Family Studies	Human Development and Family Studies	Human Development and Family Studies
Certified Associate in Project Management	Community Health Services/Liaison/Counseling	Human Services/Sciences, General	Human Services/Sciences, General	Marriage and Family Therapy/Counseling
	Distance Credentialed Counselor	Family and Consumer Sciences	Family and Consumer Sciences	Human Services/Sciences
	Educator Certification in Family and Consumer Sciences	Community Health Services	Child and Family Services	Family Studies

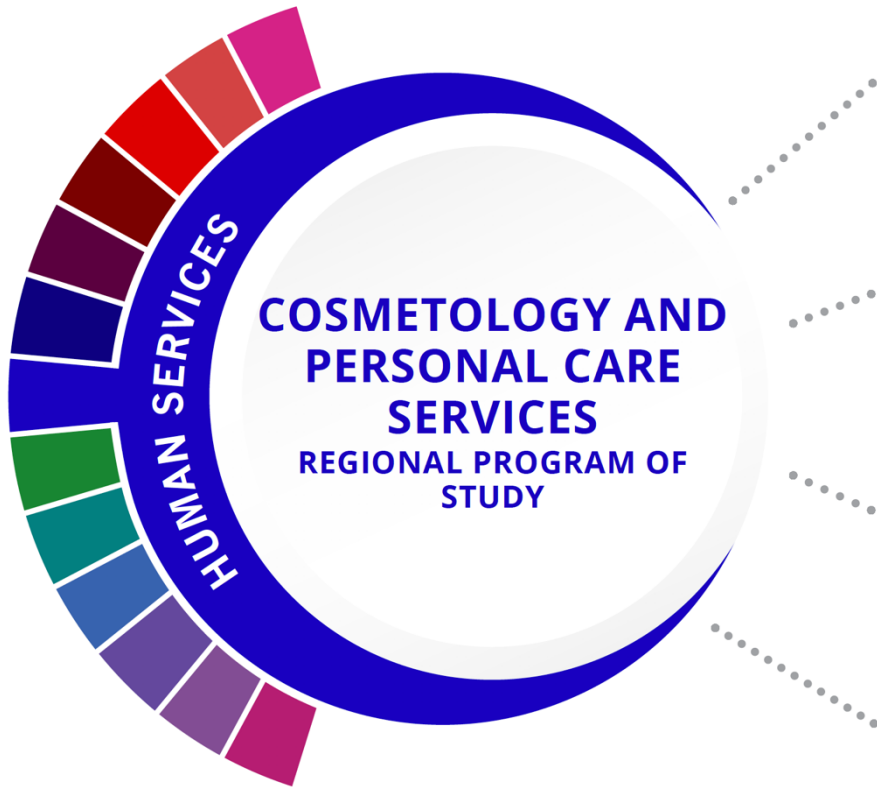
Occupations	Median Wage	Annual Openings	% Growth
Child, Family, and School Social Workers	\$41,350	2,221	17%
Social and Community Services Managers	\$65,146	608	33%
Marriage and Family Therapists	\$42,266	217	35%
Social and Human Service Assistants	\$32,448	2,822	25%
Mental Health and Substance Abuse and Behavioral Disorder Counselors	\$42,120	576	39%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
American Association of Family and Consumer Sciences, Family, Career and Community Leaders of American	Volunteer at a community center, intern for a community non-profit organization



The Human Services Career Cluster focuses on preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care services, and consumer services.



9th Grade	Introduction to Cosmetology* (1)
10th Grade	Principles of Cosmetology Design and Color Theory* (1) AND/OR Microbiology and Safety for Cosmetology Careers* (1)
11th Grade	Cosmetology I/ Lab* (3)
12th Grade	Cosmetology II/ Lab* (3)

The Cosmetology and Personal Care Services program of study introduces CTE learners to knowledge and skills related to providing beauty and personal care services. CE concentrators may learn about or practice managing personal care facilities and coordinating or supervising personal service workers. Successful completion of the Cosmetology and Personal Care program of study will fulfill requirements of a Public Services endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Cosmetology Operator License	Certified Aesthetic Laser Operator	Cosmetology/Cosmetologist, General		
Cosmetology Esthetician Specialty License	Cosmetologist	Aesthetician/Esthetician and Skin Care Specialist		
Cosmetology Manicurist Specialty License	Certified Spa Supervisor	Salon/Beauty Salon Management/Manager		
Barber Operating License	Nail Technician/Specialist and Manicurist	Cosmetology, Barber/Styling and Nail Instructor		

Occupations	Median Wage	Annual Openings	% Growth
First-Line Supervisors of Personal Service Workers	\$36,941	1,634	24%
Barbers	\$28,267	348	14%
Hairdressers, Hairstylists, and Cosmetologists	\$21,507	3,489	22%
Manicurists and Pedicurists	\$21,715	418	45%
Shampooers	\$18,720	139	24%
Skincare Specialists	\$26,437	637	22%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

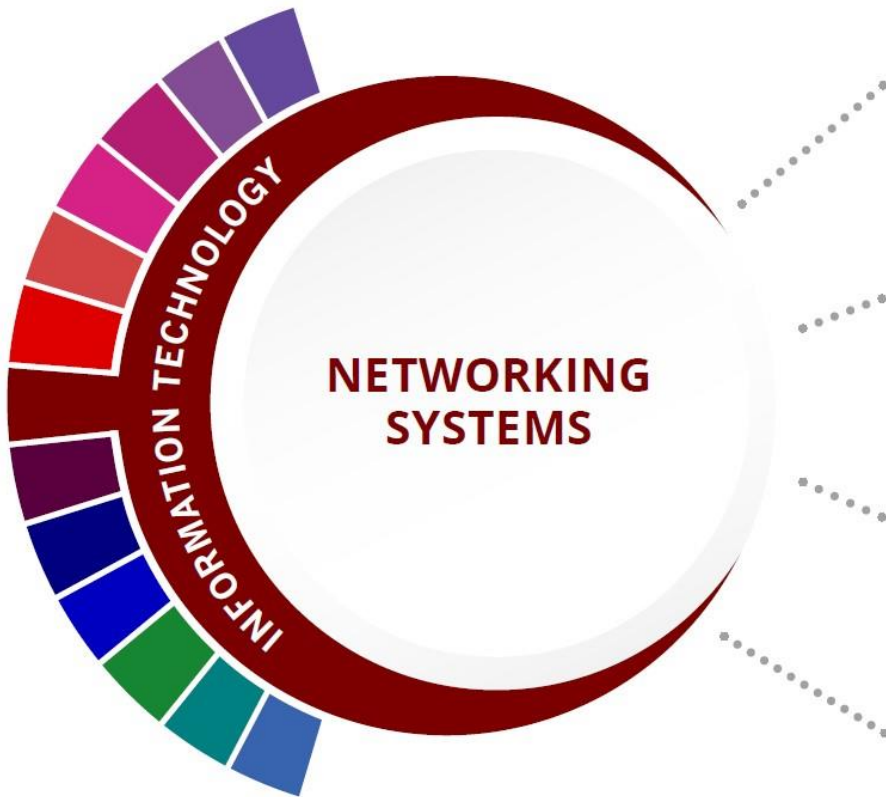
Exploration Activities:	Work Based Learning Activities:
Participation in a Career and Technical Student Organization such as TIVA, or SKILLS USA	Job shadow a cosmetologist Work part-time at a beauty salon, spa, or barbershop

Student Certifications offered at ROHS:

Cosmetology Operators License



The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional career related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.



9th Grade Principles of Information Technology (1)

10th Grade Computer Maintenance (1)

11th Grade Networking/Lab* (2)

12th Grade Practicum in Information Technology* (2)

The Networking Systems program of study explores the occupations and educational opportunities associated with designing and implementing computer and information networks, such as local area networks (LAN), wide area networks (WAN), intranets, extranets, and other data communications networks. This program of study may also include exploration into analyzing science, engineering, and other data processing problems to implement and improve computer systems. Successful completion of the Networking Systems program of study will fulfill requirements of a Business and Industry endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Oracle Certified Associate Java SE 8	AEM 6 Business Practitioner	Computer and Information Sciences, General	Computer and Information Sciences, General	Computer and Information Sciences, General
Oracle Certified Database Associate	Intelligence Planner Certification Program	Computer Systems Networking And Telecommunications	Computer Systems Networking And Telecommunications	Information Technology
Cisco Certified Entry Networking Technician (CCENT)	Cisco Certified Entry Networking Technician	Information Technology	Computer and Information Systems Security/Information Assurance	Computer and Information Systems Security/Information Assurance
Associate of (ISC)2	Microsoft Networking Fundamentals	Network and System Administration/Administrator	Computer Engineering, General	Computer Engineering, General

Occupations	Median Wage	Annual Openings	% Growth
Computer Network Architects	\$111,633	1,082	23%
Computer Systems Analysts	\$87,568	5,937	29%
Computer Network Support Specialists	\$68,037	1,824	19%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

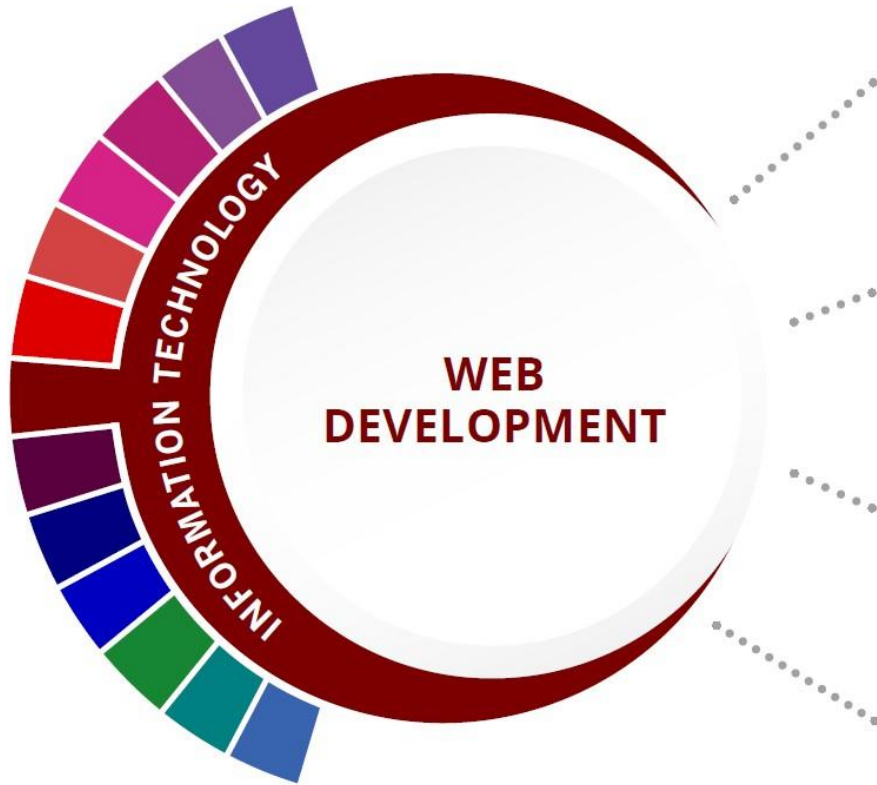
Exploration Activities:	Work Based Learning Activities:
Join TSA Job shadow a computer network architect or support specialist	Earn an industry-based certification.

Student Certifications offered at ROHS:

CompTia+ and/or MOS Technology Associate



The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional career related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.



9th Grade	Principles of Information Technology (1)
10th Grade	Web Design (1)
11th Grade	Web Game Development* (1) OR General Employability Skills (1)
12th Grade	Practicum in Information Technology* (2)

The Web Development program of study explores the occupations and educational opportunities associated with designing, creating, and modifying websites. This program of study may also explore integrating websites with other computer applications, and converting written, graphic, audio, and video components to compatible web formats by using software designed to facilitate the creation of web and multimedia content. Successful completion of the Web Development Design program of study will fulfill requirements of a Business and Industry endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE / LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
Oracle Certified Associate Java SE 8	AEM 6 Developer	Computer Programming/ Programmer, General	Web/ Multimedia Management and Webmaster	Computational Science
WD Certified Web Design Certification	Certified Webmaster Professional	Computer Science	Computer Science	Computer Science
Microsoft Technology Associate Introduction to Programming Certifications	Adobe Campaign Developer	Web Page, Digital/ Multimedia and Information Resources Design	Web Page, Digital/ Multimedia and Information Resources Design	Information Science/ Studies
	IBM Certified Solution Developer – Open Social	Computer Systems Networking and Tele-communications	Computer Systems Networking and Tele-communications	Computer Systems Networking and Tele-communications

Occupations	Median Wage	Annual Openings	% Growth
Web Developers	\$67,912	1,079	39%
Web Administrators, Computer Occupations	\$85,197	1,616	20%
Software Developers	\$104,499	6,311	30%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Join TSA Participate in a coding or computer programming club Create a web page	Get an Oracle or CISCO Certification

Student Certifications offered at ROHS:

Certified Web Design and/or MOS Technology Associate



The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, and homeland security, including professional and technical support services. Students will examine the roles and responsibilities of police, courts, corrections, private security, and protective agencies of the fire and emergency services.



9th Grade	Principles of Law, Public Safety, Corrections, and Security (1)
10th Grade	Dual Credit Law Enforcement I* (1)
11th Grade	Dual Credit Court Systems and Practices* (1)
12th Grade	Dual Credit Practicum in Law, Public Safety Corrections, and Security* (2) AND Forensic Science* (1)

The Law Enforcement program of study teaches CTE learners about the development of, adherence to, and protection of various branches of law. Students will learn how to appropriately and legally respond to breaches in the law according to statutory rules and regulations as well as investigate how and why the breaches occurred. Successful completion of the Law Enforcement program of study will fulfill requirements of a Public Services endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
Non-Commissioned Security Officer Level II	Law Enforcement Officer	Criminal Justice/Safety Studies/Law Enforcement Administration	Criminal Justice/Safety Studies/Law Enforcement Administration	Criminal Justice/Safety Studies/Law Enforcement Administration
Emergency Telecommunicator	Private Investigator/ Security Guard	Criminal Justice/ Police Science	Criminal Justice/ Police Science	Natural Resources Law Enforcement and Protective Services
	Code Enforcement Officer	Corrections	Juvenile Corrections	
	Certified Law Enforcement Planner	Criminalistics and Criminal Science	Cyber/ Computer Forensics and Counterterrorism	

Occupations	Median Wage	Annual Openings	% Growth
Police and Sheriff's Patrol Officers	\$60,112	5,241	13%
Probation Officers and Correctional Treatment Officers	\$44,054	793	9%
Correctional Officers and Jailers	\$40,186	4,683	9%
Immigration and Customs Inspectors	\$78,104	1,236	9%
First-Line Supervisors of Police and Detectives	\$91,312	253	25%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Texas Public Service Association; criminal justice clubs	Attend court hearings and other legal procedures

Student Certifications offered at ROHS:

Emergency Telecommunicator



The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, and homeland security, including professional and technical support services. Students will examine the roles and responsibilities of police, courts, corrections, private security, and protective agencies of the fire and emergency services.



9th Grade	Principles of Law, Public Safety, Corrections, and Security (1)
10th Grade	Medical Terminology (1)
11th Grade	Anatomy and Physiology* (1)
12th Grade	Dual Credit Practicum in Law, Public Safety, Corrections, and Security* (2)

The Emergency Services program of study focuses on training CTE learners to respond to emergency situations, such as medical emergencies and fire-based emergencies. Students will learn how to prevent emergencies, respond appropriately and in accordance with rules and regulations during crises, and investigate and delineate the source of the emergency. Successful completion of the Emergency Services program of study will fulfill requirements of a Public Services endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Emergency Medical Technician - Basic	Emergency Medical Technician - Basic	Emergency Medical Technology/Technician (EMT Paramedic)	Emergency Medical Technology/Technician (EMT Paramedic)	
Emergency Telecommunicator	Fire Protection Personnel/Firefighter	Fire Prevention and Safety Technology/Technician	Natural Resources Law Enforcement and Protective Services	
Basic Structure Fire Protection Certification	Fire Protection System Contractor	Fire Science/Firefighting		
	Fire Inspector			

Occupations	Median Wage	Annual Openings	% Growth
Firefighters	\$50,149	2,309	13%
Fire Inspectors and Investigators	\$54,787	161	14%
Emergency Medical Technicians	\$34,091	1,880	31%

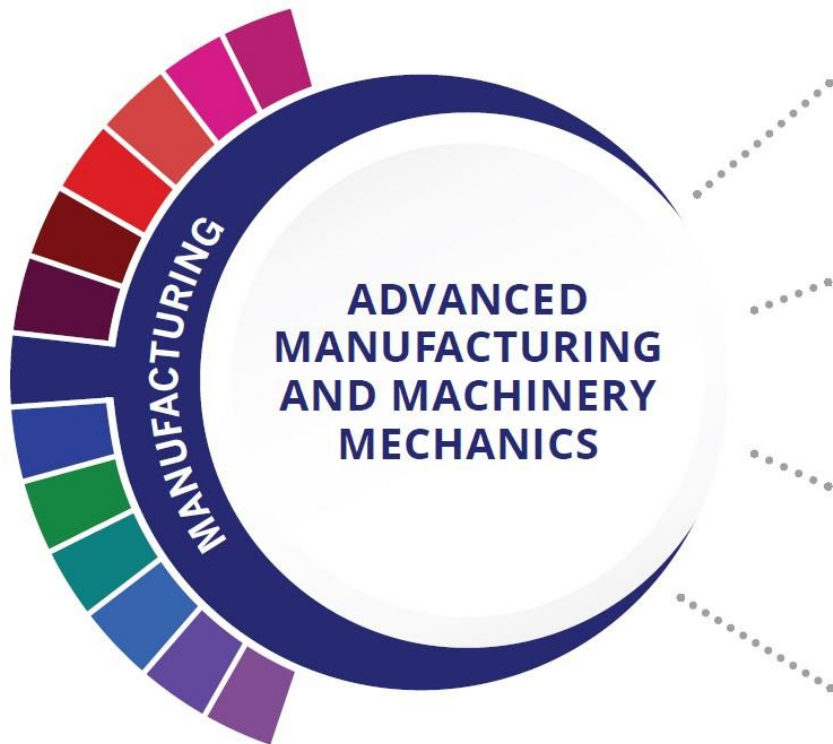
WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Attend local emergency awareness events, Texas Public Service Association	Volunteer at a hospital or a fire station

Student Certifications offered at ROHS:
EMT=Basic through Navarro College



The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.



9th Grade	Principles of Applied Engineering (1)
10th Grade	Robotics I (1)
11th Grade	Robotics II* (1) AND/OR Principles of Technology (1)
12th Grade	Engineering Design and Development* (1)

The Advanced Manufacturing and Machinery Mechanics program of study focuses on the assembly, operation, maintenance, and repair of electromechanical equipment or devices. CTE learners may work in a variety of mechanical fields, gaining knowledge and experience in robotics, refinery and pipeline systems, deep ocean exploration, or hazardous waste removal. CE concentrators may work in a variety of fields of engineering. Successful completion of the Advanced Manufacturing and Machinery Mechanics program of study will fulfill requirements of a Business and Industry endorsement. Courses with an * have prerequisites that must be met to take this course.

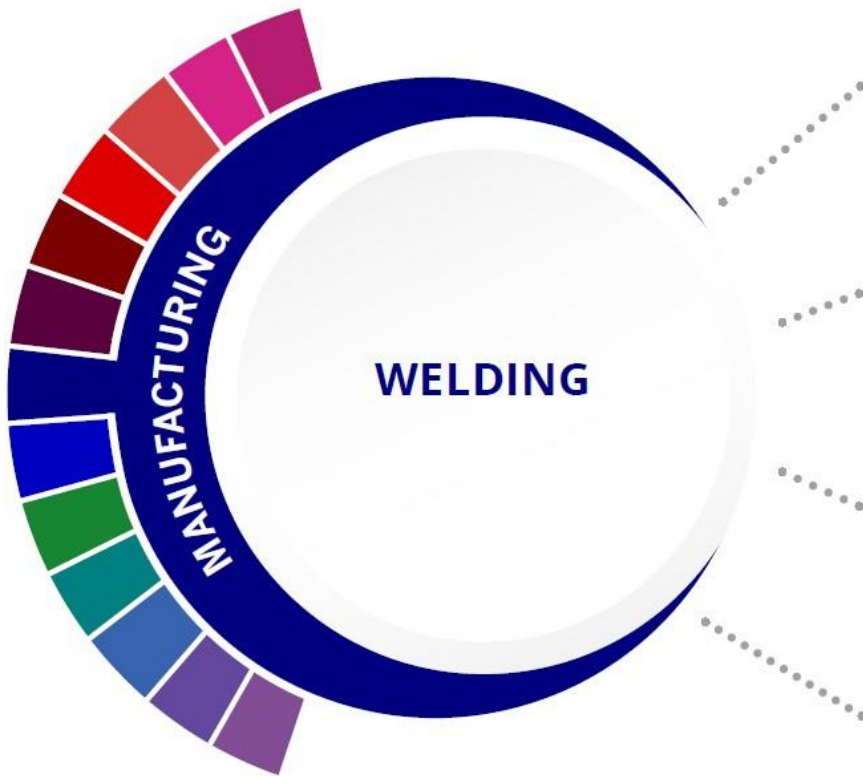
HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
FANUC Robot Operator 1	Engineer, Professional	Electro-mechanical Engineering/Technology	Electrical Engineering	Electrical Engineering
Mastercam Associate Level Certification	Certified Quality Technician	Certified Quality Technician	Industrial Engineering	Industrial Engineering
NCCER Industrial Maintenance Mechanic	Plant Maintenance Technologist	Industrial Mechanics and Maintenance Technology	Mechanical Engineering	Mechanical Engineering
NIMS Industrial Technology Maintenance - Maintenance Operations				

Occupations	Median Wage	Annual Openings	% Growth
Electro-Mechanical Assemblers	\$30,160	951	9%
Electro-Mechanical Technicians	\$56,555	127	9%
Industrial Machinery Mechanics	\$49,816	3,788	27%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES	
Exploration Activities	Work Based Learning Activities
Participate in SKILLS USA and local STEM events	Apprenticeship at a local business or



The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.



9th Grade	Introduction to Welding* (1)
10th Grade	Agricultural Mechanics and Metal Technologies* (1)
11th Grade	Dual Credit Welding I* (2)
12th Grade	Dual Credit Welding II/Lab* (3)

The Welding program of study focuses on the development and use of automatic and computer-controlled machines, tools, and robots that perform work on metal or plastic. CTE learners will learn how to modify parts to make or repair machine tools or maintain individual machines, and how to use hand-welding or flame-cutting equipment. Successful completion of the Welding program of study will fulfill requirements of a Business and Industry endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
AWS Certified Welder, D1.1, D9.1	Certified Welder or Welder Inspector	Certified Welder or Welder Inspector	Welding Engineering Technology/Technician	Welding Engineering Technology/Technician
ASW SENSE Level 1	Machining Level 1 - CNC Milling: Programming Setup & Operations	Machine Shop Technology/Assistant	Biomedical Technology/Technician	Occupational Health and Industrial Hygiene
API 1104 Welding Certificate	Certified Welding Engineering	Operations Management and Supervision	Operations Management and Supervision	Operations Management and Supervision
NCCER Welding, Level 1	Certified Environmental, Safety, and Health Trainer	Occupational Safety and Health Technology/Technician	Environmental Health	Environmental Health

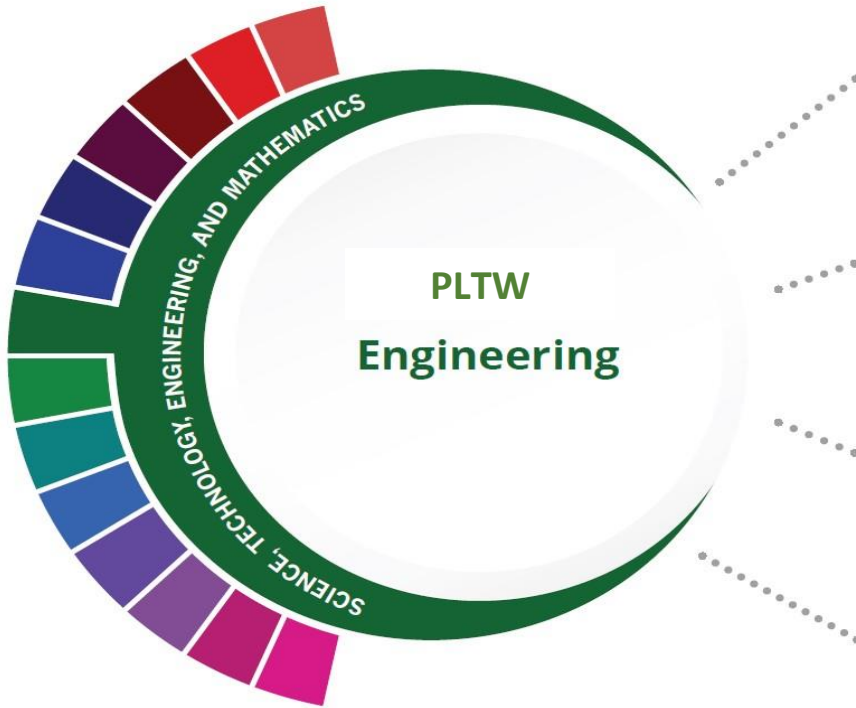
Occupations	Median Wage	Annual Openings	% Growth
Welders, Cutters, Solderers, and Braziers	\$41,350	6,171	9%
Welding Soldering and Brazing Machine Setters, Operators and Tenders	\$40,040	280	9%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES	
Exploration Activities:	Work Based Learning Activities:
Participate and compete in SkillsUSA Job shadow a machinist	Apprenticeship at a local business or industry American Welding Society

Student Certifications offered at ROHS:
AWS D1.1 and AWS D9.1



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



9th Grade	Introduction to Engineering Design (1)
10th Grade	Engineering Science* (1)
11th Grade	Digital Electronics* (1)
12th Grade	Engineering and Design and Development* (1)

The Engineering program of study focuses on the design, development, and use of engines, machines, and structures. CTE learners will learn how to apply science, mathematical methods, and empirical evidence to the innovation, design, construction, operation, and maintenance of different manufacturing systems. Successful completion of the Engineering program of study will fulfill requirements of a STEM endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Autodesk Certified Professional or User (ACU)-Inventor	Engineer, Professional	Electrical and Electronics Engineering	Electrical and Electronics Engineering	Electrical and Electronics Engineering
Certified SolidWorks Associate (CSWA)	Fluid Power Systems Designer	Drafting and Design Technology/ Technician, General	CAD/CADD Drafting and/or Design Technology/ Technician	Mechanical Engineering
Certified Engineering Technician-Audio Systems	Certified Biomedical Auditor	Engineering Technology	Bioengineering and Biomedical Engineering	Bioengineering and Biomedical Engineering
	Certified Cost Estimator/Analyst		Construction Engineering Technology/ Technician	

Occupations	Median Wage	Annual Openings	% Growth
Aerospace Engineers	\$110,843	481	9%
Industrial Engineers	\$97,074	1,263	10%
Mechanical Engineers	\$91,107	1,535	11%
Chemical Engineers	\$112,819	474	9%
Electrical Engineers	\$98,405	1,137	10%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Participate in competitions like Skills USA	Engineering internship Job shadow a machinist



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



9th Grade	Foundations of Cybersecurity (1)
10th Grade	Computer Science I* (1)
11th Grade	Networking/Lab* (2)
12th Grade	Cybersecurity Capstone* (1)

The Cybersecurity program of study includes the occupations and educational opportunities related to planning, implementing, upgrading, or monitoring security measures for the protection of computer networks and information. This program of study may also include exploration into responding to computer security breaches and virus and administering network security measures. Successful completion of the Cybersecurity program of study will fulfill requirements of a STEM endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Oracle Certified Associate Java SE 8	GIAC Reverse Engineering Malware	System Networking, and LAN/WAN Management	Computer Systems Networking and Telecommunications	Computer Systems Analysis/Analyst
Oracle Certified Database Associate	Certified Advanced Windows Forensic Examiner	Information Technology	Computer Systems Networking and Telecommunications	Information Technology
Cisco Certified Entry Networking Technician (CCENT)	SAP Certified Technology Professional System Security Architect	Computer and Information Sciences, General	Computer and Information Sciences, General	Computer and Information Sciences, General
CompTIA A+, Network+, Security+, and IT Fundamentals	Cisco Certified Network Professional Security Certification	Computer Science	Computer Science	Computer Science

Occupations	Median Wage	Annual Openings	% Growth
Information Security Analysts	\$91,915	814	29%
Network and Computer System Administrators	\$82,597	2,814	19%
Computer System Analysts	\$87,568	5,937	29%

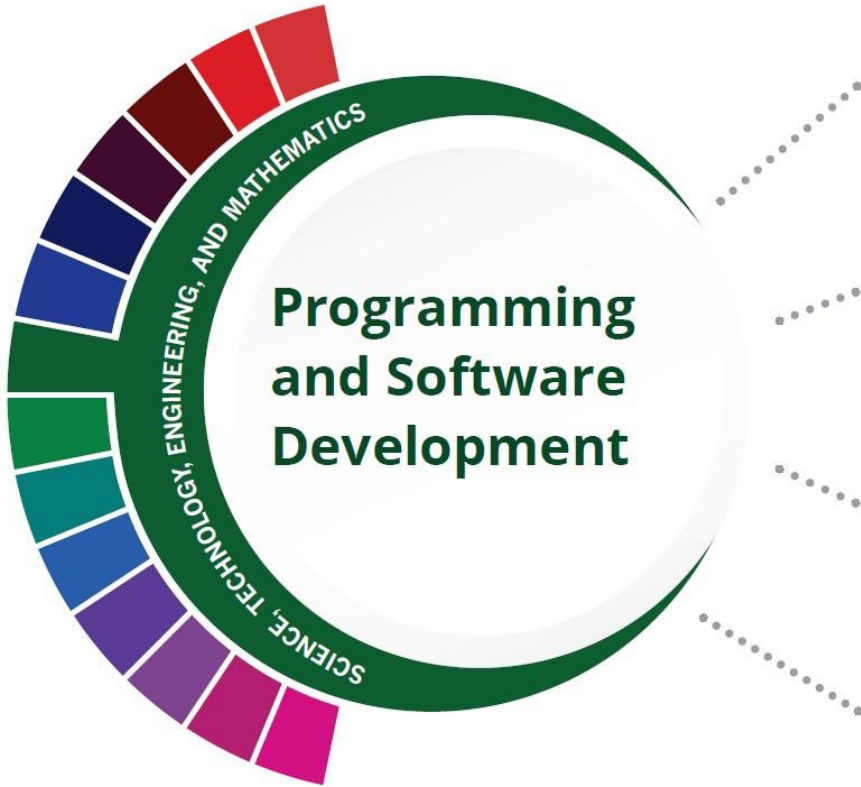
WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Join TSA Job Shadow a computer system analyst or information security analyst.	Obtain an industry based certification.

Student Certifications offered at ROHS:
CCNA Cyber Ops



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



9th Grade Computer Science I* (1)

10th Grade Computer Science II* (1)

11th Grade Computer Science III* (1)

12th Grade Practicum in Information Technology* (2)

The Programming and Software Development program of study explores the occupations and education opportunities associated with researching, designing, developing, and testing operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computer applications. This program of study may also include exploration into creating, modifying, and testing the codes, forms, and script that allow computer applications to run. Successful completion of the Programming and Software Development program of study will fulfill requirements of a STEM endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Oracle Certified Association JAVA SE 8 Programmer	Certified Computing Professional	Computer Programming/ Programmer Genera	Management Information Systems, General	Computer Software Engineer
Oracle Certified Database Associate	Cloud Technology Associate Certification	Computer Software Engineer	Computer Software Engineer	Computer Science
Microsoft Technology Associate, Introduction to Programming Using Python, HTML or CSS	AEM 6 Developer	Computer Science	Computer Science	Information Science/ Studies
Microsoft Technology Associate, Introduction to Programming Using Java or Java Script	Certified Software Analyst	Certified Software Analyst	Information Science/ Studies	

Occupations	Median Wage	Annual Openings	% Growth
Software Developer, Systems Software	\$103,334	2,985	25%
Software Developers, Applications	\$104,499	6,311	30%
Computer Programmers	\$79,893	1,454	9%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

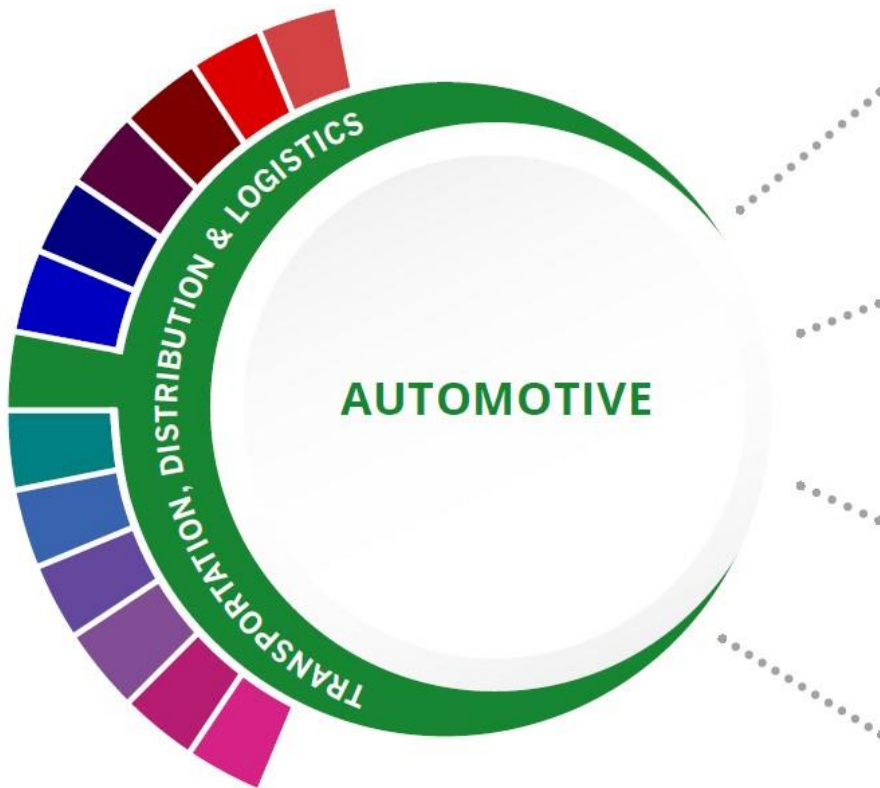
Exploration Activities:	Work Based Learning Activities:
Join TSA Participate in coding club at school	Obtain an industry-based certification.

Student Certifications offered at ROHS:

MOS Introduction to Programming Using Java Script, MOS Introduction to Programming Using Python, and MOS Introduction to Programming Using HMTL & CSS



The Transportation, Distribution, and Logistics Career Cluster focuses on careers in planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water. It also includes related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.



9th Grade	Small Engine Technology I (1)
10th Grade	Automotive Basics (1)
11th Grade	Dual Credit Automotive Technology I* (2) OR General Employability Skills (1)
12th Grade	Dual Credit Automotive Technology II/Lab* (2) OR Practicum in Transportation Systems (1)

The Automotive program of study teaches CTE learners how to repair and refinish automobiles and service various types of vehicles. CTE learners may learn to collect payment for services or supplies and perform typical vehicle maintenance procedures such as lubrication, oil change, installation of antifreeze, or replacement of accessories like wiper blades or tires. Successful completion of the Automotive program of study will fulfill requirements of a Business and Industry endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Automotive Service Excellence (ASE) Entry Level	Master Collision Repair and Refinishing Technician	Autobody/ Collision and Repair Technology/ Technician		Mechanical Engineering
Automotive Service Excellence (ASE) Professional Level	Automobile Technician: various systems and parts	Medium/Heavy Vehicle and Truck Technology/ Technician		
	Engine Machinist Technician	Mechanical Engineering/ Mechanical Technology/ Technician	Mechanical Engineering/ Mechanical Technology/ Technician	
	Collision Repair and Refinish			

Occupations	Median Wage	Annual Openings	% Growth
Automotive Body and Related Repairers	\$40,144	1,456	25%
Automotive Service Technician and Mechanics	\$38,459	5,557	18%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
SkillsUSA competition Automotive Service Association	Work at a local automotive repair or body shop.

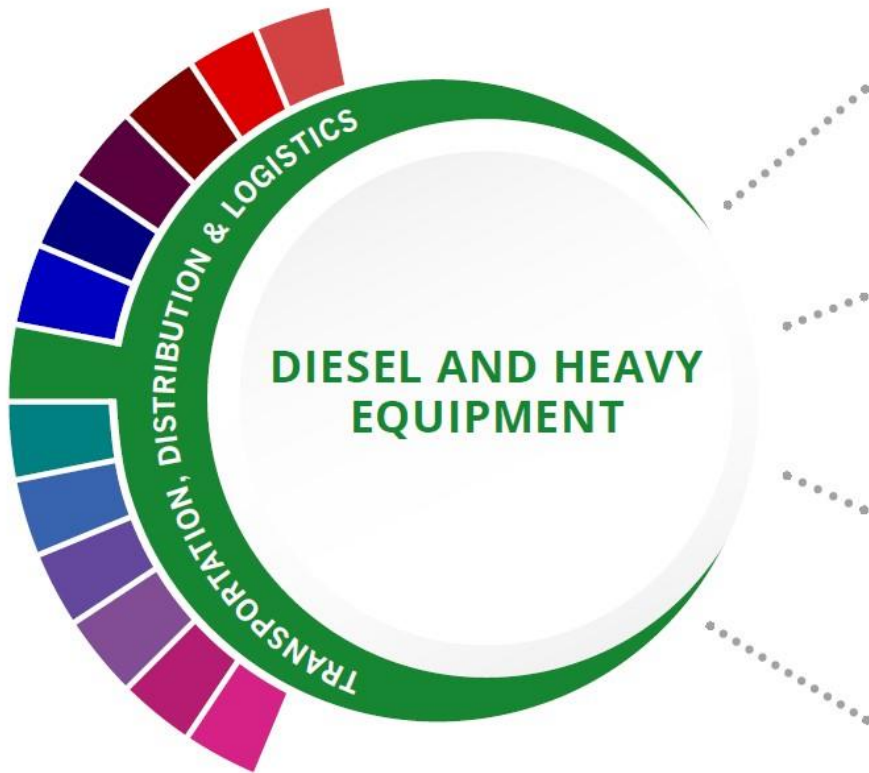
Student Certifications offered at ROHS:

ASE Brakes, ASE Electrical/Electronic Systems, ASE Engine Performance, ASE Engine Repair, ASE Maintenance & Light Repair, ASE Steering & Suspension





The Transportation, Distribution, and Logistics Career Cluster focuses on careers in planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water. It also includes related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.



9th Grade	Small Engine Technology (1)
10th Grade	Dual Credit Diesel Equipment Technology I* (2) AND Dual Credit Occupational Safety and Environmental Technology* (1)
11th Grade	Dual Credit Diesel Equipment Technology II/Lab* (3)
12th Grade	Dual Credit Practicum in Transportation Systems* (2)

The Diesel and Heavy Equipment program of study teaches students to diagnose, repair, modify, or redo mechanical and hydraulic equipment on crane, bulldozer, grader, conveyor, construction equipment, bus, and truck diesel engines. Successful completion of the Diesel and Heavy Equipment program of study will fulfill requirements of a Business and Industry endorsement. Courses with an * have prerequisites that must be met to take this course.

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
ASE Medium/ Heavy Truck Technician, Brakes (T4)	Engine Machinist Technician	Diesel Mechanics Technology/ Technician		
ASE Medium/Heavy Truck Technician, Diesel Engines (T2)	Light Vehicle Diesel Engines	Diesel Mechanics Technology/ Technician		
ASE Medium/Heavy Truck Technician, Drive Train (T3) - Professional	Transit Bus Technician	Heavy Equipment Maintenance Technology/ Technician		
ASE Medium/ Heavy Truck Technician, Electrical/ Electronic Systems (T6)	Fluid Power Mechanic			

Occupations	Median Wage	Annual Openings	% Growth
Bus and Truck Mechanics and Diesel Engine Specialists	\$44,574	3,150	21%
Mobile Heavy Equipment Mechanics, Except Engines	\$47,299	1,627	16%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Participate in SkillsUSA	Volunteer or work part-time for a repair shop that works on engines

Student Certifications offered at ROHS:

Level 1 Certification from TSTC

Superintendent

Brenda Sanford

Principal

Howard Gatewood

CTE Director

Lisa Menton



RED OAK INDEPENDENT SCHOOL DISTRICT
PUBLIC NOTIFICATION OF NONDISCRIMINATION IN CAREER AND TECHNICAL EDUCATION PROGRAMS

Red Oak ISD offers Career and Technical Education programs in Agriculture, Food and Natural Resources, Architecture and Construction, Arts, AN Technology and Communications, Business Management and Administration, Family Consumer Science, Finance, Health Science, Human Services, Information Technology, Law and Public Safety, Marketing, Science, Technology, Engineering and Math, and Transportation, Distribution and Logistics. Admission to these programs is based on interest in subject, required prerequisites, and course availability.

It is the policy of Red Oak ISD not to discriminate on the basis of race, color, national origin, sex, handicap, or age in its Career Technical Programs and 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.

Red Oak ISD will take steps to assure the lack of English language skills will not be a barrier to admission and participation in all Career Technical educational programs. For information about your rights or grievance procedures, contact the Title IX Coordinator, Kevin Freels, and/or the Section 504 Coordinator, Magda Davis, at Red Oak Independent School District, 109 W. Red Oak Road, PO Box 9000, Red Oak, TX 75154, PH: (972) 617-2941, FAX: (972) 617-4333.

El Distrito Escolar Independiente de Red Oak (Red Oak ISD)
NOTIFICACION PUBLICA DE LA NO DISCRIMINACION EN LOS PROGRAMAS DE CARRERA Y EDUCACION TECNICA

Red Oak ISD ofrece programas de Educación Profesional y Técnica en Agricultura, Alimentación y Recursos Naturales, Arquitectura y Construcción, Artes, Tecnología y Comunicación Audiovisual, Negocios y Administración de Empresas, Ciencia del Consumidor Familiar, Finanzas, Ciencias de la Salud, Servicios Humanos, Derecho y Seguridad Pública, Marketing o el mercadeo, Ciencia, Tecnología, Ingeniería y Matemáticas, Transporte, Distribución y Logística. La admisión a estos programas se basa en el interés en el tema, los requisitos previos requeridos y la disponibilidad del curso.

Es política de Red Oak ISD no discriminar por motivos de raza, color, origen nacional, sexo, discapacidad o edad en sus Programas Técnicos de Carrera y prácticas de empleo como lo requiere el Título VI de la Ley de Derechos Civiles de 1964, como Modificado; Título IX de las Enmiendas a la Educación de 1972; la Ley de Discriminación por Edad de 1975, según enmendada; Y la Sección 504 de la Ley de Rehabilitación de 1973, según enmendada.

Red Oak ISD tomará medidas para asegurar que la carencia de destrezas en el idioma Inglés no será una barrera para la admisión y la participación en todos los programas educativos de Carrera Técnica.

Para obtener información sobre sus derechos o procedimientos de quejas, póngase en contacto con el Coordinador del Título IX, Kevin Freels, y la Coordinadora de la Sección 504, Magda Davis, en el Distrito Escolar Independiente de Red Oak, 109 W. Red Oak Road, TX 75154, PH: (972) 617 - 2941, FAX: (972) 617 - 4333.

