

## HIGH SCHOOL TRADE AND INDUSTRIAL EDUCATION COURSE CODES GRADES 9-12

*High school (grades 9-12) courses in Trade and Industrial Education **require 150 contact hours** per Career and Technical Education (CTE) credit.*

Course Code	Course Name	Recommended Grade Levels	Description	High School Credit Options*	License/credential Required**
17029	Foundations of Automotive	9-12	To prepare students to understand the features of a vehicle. Learn safety around the shop and vehicle. Explore careers in the auto industry. Learn proper care and use of hand tools and shop equipment for basic vehicle maintenance. Understand the care of a vehicle, cleaning, and maintenance. Learn to be an informed consumer of a vehicle regarding purchase and care.	½ or 1 <i>Max credit = 1</i>	License Code: 17032-Automotive Technology ◆ 9-12
17030	Auto Collision Technology I	9-12	This is the beginning course for students interested in auto body repair. It is part of a sequential series of courses covering the repair of damaged bodies, fenders, and replacement parts. Students will be introduced to painting preparation and painting methods. This is a prerequisite to Auto Collision Technology II.	1 or 2 <i>Max credit = 2</i>	License Code: 17031-Auto Collision Technology ◆ 9-12
17031	Auto Collision Technology II ◆ Prerequisite: Auto Collision Technology I	10-12	To prepare students for employment in the auto body occupation. All phases of repairing damaged bodies and fenders include metal straightening by hammering, smoothing areas by filing, grinding, or sanding, concealment of imperfections, painting, and replacement of body components and trim. Students completing this sequential course will be eligible for ASE certification, as noted in the NATEF guidelines.	2 <i>Max credit = 2</i>	
17032	Automotive Technology I	9-12	To begin preparation for employment as an ASE-certified auto technician. This sequential course will include topics on vehicle engines, power transmission, steering, brakes, and electrical systems.	1 or 2 <i>Max credit = 2</i>	License Code: 17032-Automotive Technology ◆ 9-12
17036	Automotive Technology Summer Academy	9-12	Automotive Technology is a Summer Academy that allows students to take fundamentals learned through online instruction, ITV instruction, or regular classroom instruction from an accepted Automotive Technology program to gain training through project-based learning. Students will be given more detailed instruction, and hands-on training in Automotive Service Excellence (ASE) recognized processes preparing them for industry certification testing.  Automotive Technology Summer Academy must be offered as part of the Automotive Technology program. Prior approval must be received from the Department of Career and Technical Education before offering the Automotive Technology Summer Academy as an option.	½ or 1 <i>Max credit = 1</i>	

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17035	Parts Merchandising & Management	9-12	Students will gain knowledge and skills that will enable them to recognize various parts, fill out sales receipts, and collect payments or file the charges on the customer's account. The student will become familiar with the customer's needs and learn how to stock and merchandise the latest parts to meet their needs. Parts merchandisers are found in occupational settings such as automotive dealerships, retail parts stores, wholesale distributors, and others. Students will become aware of occupational and advanced training opportunities in Parts Merchandising.	2 Max credit = 2	License Code: 17035-Parts Merchandising & Management ♦ 9-12
17037	Automotive Technology II ♦ Prerequisite: Automotive Technology I	10-12	Continued preparation in vehicle engines, power transmission, steering, brakes, and electrical systems will be provided. The training includes diagnostic and testing equipment and tools used in the repair process. Students completing this sequential course will be prepared to enter college Automotive programs and can become eligible for ASE certification in 3-4 areas as noted by NATEF guidelines.	2 Max credit = 2	
17038	Automotive General Service Technology I	9-12	The General Service Technology program begins with an orientation to the eight areas of NATEF standardized programming – Engine Repair, Automatic Transmissions, Manual Drive, Suspension and Steering, Brakes, Electrical/Electronic Systems, Heating and Air Conditioning, and Engine Performance. This sequential course is a prerequisite to Automotive General Service Technology II.	1 or 2 Max credit = 2	License Code: 17032-Automotive Technology ♦ 9-12
17039	Automotive General Service Technology II ♦ Prerequisite: Automotive General Service Technology I	10-12	The second-year General Service Technology program consists of a two-hour course continuing orientation to Engine Repair, Automatic Transmissions, Manual Drive, Suspension and Steering, Brakes, Electrical/Electronic Systems, Heating and Air Conditioning, and Engine Performance. Students must complete the Electrical/Electronic Systems standard to pass the course. Automotive General Service Technology is a preparatory program to enter college Automotive Technology and does prepare students to be eligible for ASE certification.	2 Max credit = 2	
17040	Diesel Technology I	9-12	This course allows students to experience a variety of diesel and heavy equipment practices. Students will explore the field of diesel and heavy-duty equipment repair, and learn the basics of safety, equipment identification, and hand and power tools in a lab setting. Students will learn about careers within the diesel and heavy equipment repair industry. Industry partners will enhance lessons. Students will be introduced to diesel engine operation and components, hydraulics, brakes\suspension, and electrical. Technology-related mathematics, reading, writing, vocabulary, blueprint reading, and science are integrated throughout the curriculum. NATEF standards and guidelines are followed. This course is a prerequisite to Diesel Technology II.	1 or 2 Max credit = 2	License Code: 17040-Diesel Technology ♦ 9-12

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17041	Diesel Technology II ◆ Prerequisite: Diesel Technology I	10-12	This course will serve as a continuation of Diesel I. Students will be exposed to diesel careers and college options in construction, agriculture, aviation, and trucking. Students must demonstrate sound safety practices, shop organization, and equipment management. Students will learn advanced diesel concepts in fuel systems, steering and suspension, tire and wheel diagnostics, service and repair of electrical and electronic controls and systems, engines, drive trains, hydraulics, and air brake systems. Training and practice of Preventive Maintenance Inspection (PMI) are accomplished. Lessons will be enhanced by industry collaboration, job shadows, and internship experiences. Technology, mathematics, reading, writing, vocabulary, blueprint reading, and science are integrated throughout the curriculum. NATEF standards and guidelines are followed.	2 <i>Max credit = 2</i>	License Code: 17040-Diesel Technology ◆ 9-12
17045	Introduction to Commercial Driving License (CDL)	12	The focus of this class is to give the students an understanding and skills to obtain a CDL certification. Students will start with the basics and move up to the finer points of the trade. Topics include required CDL Manual subjects such as General Knowledge, Air Brakes, Combination Vehicle, and Tanker and Doubles/ Triples endorsements. Also covered are hours of service, weight and balance, vehicle out-of-service regulations, and National Safety Council professional truck driver DDC. Students will use a school-owned tractor-trailer to log behind-the-wheel hours for real-world experience and to practice for the test. At the end of the year, students will have been taught the skills to obtain a CDL permit and pass the CDL driver's test. Students must be 18 to obtain the CDL permit and earn the CDL license.	1 <i>Max credit = 1</i>	License Code: 17045-Introduction to Commercial Driving License (CDL) ◆ 10-12
17050	Culinary Arts I	9-12	Culinary Arts I introduces students to the occupation concerned with preparation and service of food. Contents may include opportunities in the food service industry, career maturity skills, safety and sanitation, organization of food preparation, menu planning, recipe selection, and food purchasing. This course is a prerequisite to Culinary Arts II.	1 or 2 <i>Max credit = 2</i>	License Code: 17050-Culinary Arts ◆ 9-12
17051	Culinary Arts II ◆ Prerequisite: Culinary Arts I	10-12	Culinary Arts II continues training for food service occupation and includes topics on financial management, current issues in food service, legislation affecting the industry and its workers, and career maturity skills. The Culinary Arts program prepares students for college programs in food service.	2 <i>Max credit = 2</i>	

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17072	Commercial Art I	9-12	Commercial Art I introduce students to the skills required to become a commercial artist. Application of art to the design of commercial products for decorative, aesthetic effects, and current styling will be introduced. Software applications will be introduced so that students can develop products electronically. The Commercial Art course is a prerequisite to Commercial Art II.  <b>Note: This course can be taught for CTE credit only. For Fine and Performing Arts credit, Commercial Art can be found under Fine and Performing Arts.</b>	1 or 2  <i>Max credit = 2</i>	License Code: 17073-Commercial Art ◆ 9-12
17073	Commercial Art II ◆ Prerequisite: Commercial Art I	10-12	Commercial Art II continues skill development in design and aesthetic effects of products. Advanced software applications and training are incorporated. The course also includes orientation to production methods and product knowledge. The Commercial Art program prepares students to enter college commercial art programs.  <b>Note: This course can be taught for CTE credit only. For Fine and Performing Arts credit, Commercial Art can be found under Fine and Performing Arts.</b>	2  <i>Max credit = 2</i>	
17080	Photography	9-12	Students will gain knowledge and skill that will enable them to recognize and understand Commercial Photography in the following areas: 35 mm Camera Operation, Film Processing, Printing/Enlarging, and Lighting. Students will become aware of occupational and advanced training opportunities in Photography.  <b>Note: This course can be taught for CTE credit only. For Fine and Performing Arts credit, Photography can be found under Fine and Performing Arts.</b>	1 or 2  <i>Max credit = 2</i>	License Code: 17080-Photography ◆ 9-12
17100	Building Trades I	9-12	Building Trades I provide an orientation to the building trades that meets industry standards. The course is standards-based, beginning with Core Curriculum, which includes Basic Safety, construction math, Introduction to Hand and Power Tools, Introduction to Construction Drawings, Basic Rigging, Communication, and Employability Skills. Fundamentals of building are introduced, including floor, wall, roof systems, and structure enclosure. Building Trades, I is a prerequisite to Building Trades II.	1 or 2  <i>Max credit = 2</i>	License Code: 17100-Building Trades ◆ 9-12
17105	Foundations of Building Trades	9-12	Foundations of Building Trades will expose students to the opportunities available in the architecture and construction industry, including occupations such as carpenter, electrician, plumber, heating/air conditioning technician, safety supervisor, architect, engineer, and other occupations. Students learn about the processes involved in construction projects and may engage in various small projects. These courses emphasize responsibilities, qualifications, work environment, rewards, and career paths within construction-related fields.	½ or 1  <i>Max credit = 1</i>	License Code: 17105-Building Trades ◆ 9-12

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17117	Building Trades II ◆ Prerequisite: Building Trades I	10-12	Building Trades II continues with the fundamentals of building with advanced training in floor, wall, and roof systems. Advanced enclosure techniques will be included. Enhanced safety protocol will be included with an emphasis on safety practices. Building Trades II will continue fundamentals learned in Building Trades I but will also include Introduction to Residential Plumbing, Electrical, HVAC, Masonry, Exterior, and Interior Finishing. Students who complete course modules and meet all safety standards will be eligible to receive nationally recognized industry credentials.	2 Max credit = 2	License Code: 17100-Building Trades ◆ 9-12
17101	Building Trades Summer Academy	9-12	Building Trades Summer Academy provides a hands-on opportunity for students to integrate previously learned skills from Building Trades I or Building Trades II into Summer Academy. The Summer Academy will combine classroom skills with hands-on learning of building trades fundamentals. The Summer Academy must be part of Building Trades I and Building Trades II and is only for students in established Centers. This class is offered as part of a Building Trades Program. The Center must receive prior approval from the Department of Career and Technical Education before offering the Building Trades Summer Academy as a class option.	½ Max credit = ½	
17110	Facilities Maintenance I	9-12	Facilities Maintenance I orientate students to careers in maintaining buildings such as office buildings or schools. The course is standards-based, beginning with the Core Curriculum, which includes Basic Safety, Construction Math, Introduction to Hand and Power Tools, Introduction to Blueprints, Basic Rigging, Communication, and Employability Skills. Introduction to door repair or replacement, window repair or replacement, maintaining various floor surfaces, and understanding cleaning methods for various surfaces. Facilities Maintenance I is a prerequisite to Facilities Maintenance II.	1 or 2 Max credit = 2	License Code: 17110-Facilities Maintenance ◆ 9-12
17112	Heating, Ventilating, & Air Conditioning	9-12	This introductory course addresses air quality standards of the interior environment. Instruction will be provided in the areas of heating and cooling. Students will learn the basic concepts of circulating and cleaning the air and adding or removing humidity. An introduction covers safety, tools, equipment, and the fundamentals of electricity. Students will work with electrical components, wiring, compressors, evaporators, condensers, and metering devices. Troubleshooting methods will be taught in heating and cooling systems.	1 or 2 Max credit = 2	License Code: 17112-Heating, Ventilating, & Air Conditioning ◆ 9-12

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17113	Automated Manufacturing	9-12	Students will learn about the manufacturing industry's concepts and career opportunities. Craft course offerings will include metal welding, machining, blueprint reading, fabrication, robotics, assembly, industry terminology, safety, tools, milling, electrical principles, and measurement. The course of study will also incorporate leadership skills, professional development, and organizational skills.	1 or 2 Max credit = 2	License Code: 17113-Automated Manufacturing ◆ 9-12
17115	Sheet Metal Technology	9-12	This course provides instruction in the sheet metal industry regarding the cooling and heating of interior environments. The following aspects of the sheet metal industry will be introduced: basic safety, math; hand tools, power tools; blueprints and specifications; fasteners, hangers, and supports; steel and other metals; and an introduction to insulation. Sheet metal processes will include sheet metal duct fabrication, gutters and downspouts, and roof flashing.	1 or 2 Max credit = 2	License Code: 17115-Sheet Metal Technology ◆ 9-12
17118	Facilities Maintenance II ◆ Prerequisite: Facilities Maintenance I	10-12	Facilities Maintenance II incorporates advanced skill training. The Core Curriculum is completed, and enhanced safety protocol, including participation as a safety officer, is included. Additional topics will be introduced, including electrical device service, plumbing fixture maintenance, and landscape maintenance. Students who complete course modules and meet all safety standards will be eligible to receive national recognition and can articulate the national recognition into college construction craft programs.	1 or 2 Max credit = 2	License Code: 17110-Facilities Maintenance ◆ 9-12
17120	Residential Plumbing	9-12	This course provides the student with the basic knowledge of plumbing code, trade skills, job site expectations, and blueprint reading. The curriculum includes state codes, various aspects of materials, equipment and fixtures, and service and installation procedures. Activities will include the layout of water and sanitation systems; working with various materials such as cast iron, plastic, copper, and steel; setting fixtures and proper hookups; and plumbing service.	2 Max credit = 2	License Code: 17120-Residential Plumbing ◆ 9-12

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17125	Electrical Technology	9-12	This program will provide students with the background necessary to enter the field of electrical wiring in residential construction. The course of study includes electrical fundamentals, electrical code study, math, residential wiring, electrical drafting, blueprint reading, and alternating current theory. Hands-on practical wiring of equipment circuits will be provided in a laboratory setting.	2 <i>Max credit = 2</i>	License Code: 17125-Electrical Technology ◆ 9-12
17130	Drafting Technology I	9-12	Drafting Technology I introduces careers in drafting. The course covers theory, laboratory, and shop work related to gathering and translating data or specifications. Orientation to the use of drafting tools and beginning Computer Aided Drafting software is included in the first year. The types of drafting introduced include architectural, mechanical, structural, pneumatic, marine, electrical-electronic, and topographical, as well as other drawings and sketches. Drafting Technology I is a prerequisite course to Drafting Technology II.	½, 1, or 2 <i>Max credit = 2</i>	License Code: 17130-Drafting Technology ◆ 9-12
17131	Drafting Technology II ◆ Prerequisite: Drafting Technology I	10-12	Drafting Technology II provides advanced software application training requiring greater detail and accuracy. Use of reproduction materials, equipment, and processes, preparation of reports and data sheets for specification writing, development of plan and process charges, and development of models will be included. Completion of the Drafting Program prepares students for college drafting.	1 or 2 <i>Max credit = 2</i>	
17132	Computer Aided Drafting	9-12	Students will explore CAD (Computer Aided Drafting) software to complete drawings used in engineering, architecture, and manufacturing. Students will develop a proficiency in CAD commands and their applications and utilize various software programs and work in 2D and 3D formats.	1 or 2 <i>Max credit = 2</i>	License Code: 17130-Drafting Technology ◆ 9-12



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17140	Audio/Visual Production	9-12	Audio/Visual Production courses provide students with the knowledge and skills necessary for television, video, film, online, and/or radio production. Writing scripts, camera operation, use of graphics and other visuals, lighting, audio techniques, editing, production principles, and career opportunities are typical topics covered within production courses. Students are usually required to produce their program or segment. Additional topics such as broadcast industry regulations, radio/TV operation, power of the medium, photography, transmission technology, and so on may be included.	½, 1 or 2 <i>Max credit = 2</i>	License Code: 17140-Television Production ♦ 9-12
17150	Electronics Technology I	9-12	Electronics Technology I will provide students with a working knowledge of Direct Current (DC) and Alternation Current (AC) theory and application. Integrated math and physic concepts will be provided to support the understanding of DC and AC circuitry. Electronics Technology I is a prerequisite course to Electronics Technology II.	1 or 2 <i>Max credit = 2</i>	License Code: 17150-Electronics Technology ♦ 9-12
17151	Electronics Technology II	9-12	Electronics Technology II continues skill development using solid-state technology such as diodes, transistors, integrated circuits, optoelectronic devices, digital electronics, power supplies, and amplifiers. Additional topics include communication, instrumentation, lasers, security systems, and electronic systems technology. Articulation with college electronics programs is available. Electronics Technology II is a prerequisite to Electronics Technology III.	1 or 2	License Code: 17150-Electronics Technology ♦ 9-12
17152	Electronics Technology III	9-12	Designing and installing computer networks, home theater, security systems, and Programmable Logic Computers. Students will also have opportunities for Career tours and hands-on projects to enhance the student's understanding of the electronics career field. Full articulation agreements with post-secondary education with successful completion of the course.	1 or 2 <i>Max credit = 2</i>	
17190	Graphic Communications I	9-12	Graphic Communications I includes instruction in graphic theory, hot and cold typesetting, lithography, photo engraving, and other graphic arts related to the printing industry. Emphasis on applied academics, professional development, leadership, and organizational skills are integrated. Graphic Communications I is a prerequisite course to Graphic Communications II.	1 or 2 <i>Max credit = 2</i>	License Code: 17190-Graphic Communications ♦ 9-12
17191	Graphic Communications II ♦ Prerequisite: Graphic Communications I	10-12	Graphic Communications II provides advanced instruction in typographical layouts and designs, hand and machine typesetting, and camera and plate work. Emphasis on applied academics, professional development, leadership, and organizational skills are integrated. Graphic Communications	2 <i>Max credit = 2</i>	



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17200	Heavy Equipment Operations	10-12	Heavy Equipment Operation enables students to safely operate heavy equipment for mining, construction, and utility industries. Typically, courses also include light maintenance principles and techniques.	½ or 1 Max credit = 1	License Code: 17200 – Heavy Equipment Operations & Maintenance ♦ 9-12
17201	Heavy Equipment Mechanics ♦ Prerequisite: Heavy Equipment Mechanics	10-12	Heavy Equipment Mechanics includes the service and repair of electrical, mechanical, power transfer, hydraulic, fuel, and cooling systems of heavy equipment such as that used in mining, construction, and utility industries.	½ or 1 Max credit = 1	License Code: 17200 – Heavy Equipment Operations & Maintenance ♦ 9-12
17230	Machine Tooling Technology	9-12	To prepare students to enter the machine tool operation. Covers the theory and shop work related to teaching safe and intelligent operation of machines found in industry are emphasized. Included is a practical application of theory which is required by the occupation. Units of instruction include safety, measurement, tools, cutting tools and speeds, lathes, milling shapers, grinders, and other machine operations. Emphasis on applied academics, professional development, leadership, and organizational skills are integrated throughout the curriculum.	1 or 2 Max credit = 2	License Code: 17230-Machine Tooling Technology ♦ 9-12
17235	Foundations of Welding	9-12	This course will expose students to opportunities in the manufacturing industry, including occupations such as assembler, manufacturing technician, machine operator, welder, and other occupations in the production pathway. Students learn about the processes involved in manufacturing and welding and may engage in various small projects. This course emphasizes responsibilities, qualifications, work environment, safety, and career paths within construction-related fields.	½ or 1 Max credit = 1	License Code: 17236-Welding Technology ♦ 9-12
17236	Welding Technology I	9-12	This course introduces students to a career in welding. The course begins covering various types of metal welding, brazing, flame cutting, properties of metals, blueprint reading, electrical principles, welding symbols, and mechanical drawing. Emphasis on applied academics, professional development, leadership, and organizational skills are integrated throughout the curriculum. Welding Technology I is a prerequisite course to Welding Technology II.	1 or 2 Max credit = 2	

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17237	Welding Technology II ♦ Prerequisite: Welding Technology I	10-12	Welding Technology II provides advanced training in various welding applications in preparation for college welding programs or entering employment. The course will adhere to American Welding Society standards in welding processes. Continued emphasis will be placed on applied academics, professional development, leadership, and organizational skills.	2 <i>Max credit = 2</i>	
17238	Virtual Center Welding Technology Summer Academy	9-12	Welding Technology 17238 is a Summer Academy that allows students to take fundamentals learned through online instruction, ITV instruction, or articulation from an accepted Agriculture program to gain training in advanced welding techniques. Students will be given more detailed instruction, and hands-on training in American Welding Society-recognized processes, preparing them for industry certification testing.  Virtual Welding Technology Summer Academy must be a part of the Welding Technology or Ag Mechanics class for students in Virtual Centers only and must be offered as part of the Welding Technology program. The Virtual Center must receive prior approval from the Department of Career and Technical Education before offering the Welding Technology class as an option.	$\frac{1}{2}$ <i>Max credit = <math>\frac{1}{2}</math></i>	
17310	Recreational Small Engine Technology I	9-12	Recreational Small Engine Technology I includes the maintenance repair of various small engines such as lawnmowers, outboard motors, chain saws, and rototillers. The course includes a theory and practical application lab. This course is a prerequisite to Recreational Small Engines II.	1 or 2 <i>Max credit = 2</i>	License Code: 17310-Recreational Small Engine Technology ♦ 9-12
17311	Recreational Small Engine Technology II ♦ Prerequisite: Recreational Small Engine Technology I	10-12	Recreational Small Engine Technology II provides advanced instruction in the maintenance repair of various small engines. The course includes principles of the internal engine, reading technical manuals, and customer service.	2 <i>Max credit = 2</i>	
17410	Exploration of Oil Industry Careers	9-12	This is a beginning course for students interested in exploring petroleum industry careers. The course introduces students to oil industry occupations and the occupations concerned with oil production, from exploration to refining, including aptitude and interest. The course will cover the processes involved in exploration for oil and gas, obtaining mineral rights, and getting the oil from the ground to the pipeline.	$\frac{1}{2}$ or 1 <i>Max credit = 1</i>	License Code: 17400-Petroleum Technology ♦ 9-12

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17413	Petroleum Industry Skills	9-12	The course will cover basic workplace safety and emphasize safety protocol required in the Petroleum Industry and the oil field, including safety practices on projects and the use of a safety officer. Students who complete course modules and meet all safety standards will be NCCER and OSHA 10 Certified. Students will be introduced to the Production processes from land rights to pipelines and then the basic principles of oil field technology. The course will cover basic mechanical components and their application.	1 <i>Max credit = 1</i>	License Code: 17400-Petroleum Technology ♦ 9-12
17812	Aviation Technology I	9-12	To provide students with employment in the aviation field. The course covers flight, flight operations, aviation weather, performance, and navigation fundamentals. The course also explores careers in air traffic control, flight dispatching, and airport management. Units of instruction include safety of flight, airport layout, aeronautical charts, radar, radio procedures, airplane power plant, aerodynamics, weather patterns, and hazards. Emphasis on applied academics in math and science is integrated throughout the curriculum and decision-making principles as it applies to flight-related factors.	1 or 2 <i>Max credit = 2</i>	License Code: 17812-Aviation Technology ♦ 9-12
17813	Aviation Technology II	10-12	Students will be prepared to pass the Federal Aviation Administration, FAA, private pilot verbal exam. The course will cover advanced flight topics as well as topics covered in Aviation I to an advanced level. Students will also work in teams to build a full-scale aircraft.	1 or 2 <i>Max credit = 2</i>	License Code: 17812-Aviation Technology ♦ 9-12

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17814	Unmanned Aircraft Systems	10-12	<p>The Unmanned Aircraft Systems course will teach students a basic understanding of recreational and commercial unmanned aircraft operations. They will identify the responsibility and authority of the remote PIC, discuss rules of UAS operation, and understand the significance of airspace Classes B, C, D, E, and G as they pertain to UAS. Identify special-use airspace where UAS usage may be prohibited. Understand weather and how it affects the flight of UAS. Understand general loading and performance data and airport operations. When students complete this course, they will have a general understanding and knowledge of the operation and uses of UAS as they pertain to the world of Aviation.</p>	<p>½, 1, or 2  <i>Max credit = 2</i></p>	<p style="text-align: center;">License Code: 17812-Aviation Technology ♦ 9-12  OR  17814-Unmanned Aircraft Systems ♦ 9-12</p>

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Course Code	Course Name	Recommended Grade Levels	Description	High School Credit Options*	License/credential Required**
17950	T&I Capstone  ◆ Prerequisite: minimum 3 credits in the same field of study	11-12	<p>This course serves as the culminating and integrative experience designed to allow students to expand their knowledge in their career pathways. It is a project-based course that would take a student through the design process to a finished product, incorporating 21st Century Skills, thinking critically, and solving challenging problems. The course would include a major project, engaging in extended learning and/or an internship. The student must be able to demonstrate through their project all that they have learned in their program of study by applying it. Each capstone project should incorporate the broader community, some aspect of “giving back” to others, encouraging students to connect their project (s) to the community or to integrate outside-of-school learning experiences.</p> <p><b>Key Requirements:</b></p> <ol style="list-style-type: none"> <li>1. Students would meet with the Capstone team (teacher, career advisor, administrator, and parent).</li> <li>2. Lay out a plan of study (Individual CTE Learning Plan) to meet the goal determined by the Capstone team.</li> <li>3. Capstone team would monitor progress (assessment) and either add to or change the individual learning plan to meet the student goals.</li> <li>4. Maintain a portfolio of learning outcomes.</li> </ol>	<p style="text-align: center;">½ or 1</p> <p style="text-align: center;"><i>Max credit = 2</i></p>	<p>License Code: 17031-Auto Collision Technology ◆ 9-12 <b>OR</b> 17032-Automotive Technology ◆ 9-12 <b>OR</b> 17035-Parts Merchandising &amp; Management ◆ 9-12 <b>OR</b> 17040-Diesel Technology ◆ 9-12 <b>OR</b> 17045-Introduction to Commercial Driving License (CDL) ◆ 10-12 <b>OR</b> 17050-Culinary Arts ◆ 9-12 <b>OR</b> 17073-Graphic Communication ◆ 9-12 <b>OR</b> 17080-Photography ◆ 9-12 <b>OR</b> 17100-Construction Technology ◆ 9-12 <b>OR</b> 17110-Facilities Maintenance ◆ 9-12 <b>OR</b> 17112-Heating, Ventilating, &amp; Air Conditioning ◆ 9-12</p> <p style="text-align: right;"><b>(Continued on Next Page)</b></p>

## HIGH SCHOOL TRADE AND INDUSTRIAL EDUCATION COURSE CODES GRADES 9-12

High school (grades 9-12) courses in Trade and Industrial Education **require 150 contact hours** per Career and Technical Education (CTE) credit.

Course Code	Course Name	Recommended Grade Levels	Description	High School Credit Options*	License/credential Required**
17950	<p style="text-align: center;"><b>T&amp;I Capstone</b></p> <p style="text-align: center;"><b>(Continued)</b></p> <p style="text-align: center;">◆ Prerequisite: minimum 3 credits in the same field of study</p>				<p style="text-align: center;"><b>(Continued from Previous Page)</b></p> <p style="text-align: center;">License Code: <b>OR</b> 17113-Automated Manufacturing ◆ 9-12 <b>OR</b> 17115-Sheet Metal Technology ◆ 9-12 <b>OR</b> 17120-Residential Plumbing ◆ 9-12 <b>OR</b> 17125-Electrical Technology ◆ 9-12 <b>OR</b> 17130-Drafting Technology ◆ 9-12 <b>OR</b> 17140-Television Production ◆ 9-12 <b>OR</b> 17150-Electronics Technology ◆ 9-12 <b>OR</b> 17190-Graphic Communications ◆ 9-12 <b>OR</b> 17230-Machine Tooling Technology ◆ 9-12 <b>OR</b> 17236-Welding Technology ◆ 9-12 <b>OR</b> 17310-Recreational Small Engine Technology ◆ 9-12</p> <p style="text-align: center;"><b>(Continued on Next Page)</b></p>

## HIGH SCHOOL TRADE AND INDUSTRIAL EDUCATION COURSE CODES GRADES 9-12

*High school (grades 9-12) courses in Trade and Industrial Education **require 150 contact hours** per Career and Technical Education (CTE) credit.*

Course Code	Course Name	Recommended Grade Levels	Description	High School Credit Options*	License/credential Required**
17950	<p style="text-align: center;"><b>T&amp;I Capstone</b></p> <p style="text-align: center;"><b>(Continued)</b></p> <p>◆ Prerequisite: minimum 3 credits in the same field of study</p>				<p style="text-align: center;"><b>(Continued from Previous Page)</b></p> <p style="text-align: center;">License Code: <b>OR</b> 17400-Petroleum Technology ◆ 9-12 <b>OR</b> 17812-Aviation Technology ◆ 9-12 <b>OR</b> 17999-Cooperative Work Experience ◆ 10-12</p>
17999	Cooperative Work Experience	11-12	<p>Provides students with a regularly scheduled, supervised employment opportunity related to Trade and Industrial Occupations to develop and improve work skills. The employment must be preceded by, or concurrent with, classroom instruction related to the work experience, consistent with the student's occupational goals, and related to the Trade and Industrial Education program area. There shall be a training agreement among all partners regarding the work experience (school, employer, student, and parents/guardians) outlining the expectations of each party. The instructor shall also develop a specific training plan with the employer for each student placed. The training plan shall include provisions for assessing student progress and on-site visits by the instructor during the student's placement.</p> <p><b>NOTE: Students must be at least 16 years old and may be paid a wage by the employer.</b></p>	<p>Maximum of 1 credit per semester, not to exceed 4 credits while in high school</p> <p style="text-align: right;"><i>Max credit = 4</i></p>	<p style="text-align: center;">License Code: 17999-Cooperative Work Experience ◆ 10-12</p>

\* *High school curricular requirements are spelled out in NDCC 15.1-21-02, and High school unit - instructional time is NDCC 15.1-21-03. Maximum credit refers to the maximum units of credit a student may earn for a course over four years of high school. (Example: Band - a student may be enrolled in band all four years of high school -- earning a possible total of four units of credit.)*

\*\* *Please refer to the second page of the teacher's North Dakota Educator's Professional license to verify which subject areas a teacher is qualified to teach. Licenses and endorsements are obtained on a teaching license from the Education Standards and Practices Board (ESPB).*

*Credentials are obtained from the Department of Public Instruction (DPI) and issued to individuals with a teaching license.*