

CAREER PROGRAMS IN TRANSPORTATION, DISTRIBUTION, AND LOGISTICS

CAREER CLUSTER	Manufacturing	Transportation, Distribution, and Logistics	Transportation, Distribution, and Logistics	Transportation, Distribution, and Logistics	Transportation, Distribution, and Logistics	Transportation, Distribution, and Logistics	Transportation, Distribution, and Logistics
CIP	47.0409	47.0603	47.0604	47.0608	49.0102	49.0205	49.0209
PROGRAM TITLE	Parts and Warehousing Operations and Maintenance Technician	Auto-body/Collision and Repair Technology/ Technician	Automobile/ Automotive Mechanics Technology/ Technician	Aircraft Power-plant Technology/ Technician	Airline / Commercial / Professional Pilot and Flight Crew	Truck and Bus Driver/Commercial Vehicle Operator and Instructor.	Forklift Operation/Operator.
GROUP 1: ORIENTATION COURSES (Minimum Selection: One course from Group 1 or 2)							
ORIENTATION COURSES	Career Exploration	Career Exploration	Career Exploration	Career Exploration	Career Exploration	Career Exploration	Career Exploration
	Exploration of Transportation, Distribution and Logistics	Exploration of Transportation, Distribution and Logistics	Exploration of Transportation, Distribution and Logistics	Exploration of Transp., Distribution and Logistics	Exploration of Transportation, Distribution and Logistics	Exploration of Transportation, Distribution and Logistics	Exploration of Transportation, Distribution and Logistics
	Introduction to Technology and Engineering (Industrial)	Introduction to Technology and Engineering (Industrial)	Introduction to Technology and Engineering (Industrial)	Introduction to Technology and Engineering (Industrial)	Introduction to Technology and Engineering (Industrial)	Introduction to Technology and Engineering (Industrial)	Introduction to Technology and Engineering (Industrial)
	Production Technology	Production Technology	Production Technology	Production Technology	Production Technology	Production Technology	Production Technology
	Communication Technology	Communication Technology	Communication Technology	Communication Technology	Communication Technology	Communication Technology	Communication Technology
	Energy Utilization Technology	Energy Utilization Technology	Energy Utilization Technology	Energy Utilization Technology	Energy Utilization Technology	Energy Utilization Technology	Energy Utilization Technology
	Transportation Technology	Transportation Technology	Transportation Technology	Transportation Technology	Transportation Technology	Transportation Technology	Transportation Technology
GROUP 2: INTRODUCTORY COURSES							
INTRODUCTORY COURSES	Foundations of Technology	Foundations of Technology	Foundations of Technology	Foundations of Technology	Foundations of Technology	Foundations of Technology	Foundations of Technology
	Industrial Safety	Industrial Safety	Industrial Safety	Industrial Safety	Industrial Safety	Industrial Safety	Industrial Safety
	Energy and Power of Transportation Systems	Energy and Power of Transportation Systems	Energy and Power of Transportation Systems	Energy and Power of Transportation Systems	Energy and Power of Transportation Systems	Energy and Power of Transportation Systems	Energy and Power of Transportation Systems
			Small Engine Repair	Small Engine Repair			
			Beginning Automotive Service				
		Beginning Welding					
GROUP 3: SKILLS COURSE (Minimum Selection 1)							
SKILLS COURSE	Warehouse Operations I	Auto-Body I	Automotive Technician I	Aircraft Technician I	Aviation/Pilot I	Truck and Bus Driving	Light and Heavy Equipment Operation
	Distribution and Logistics		Diesel Mechanics I				
GROUP 4: ADVANCED COURSES							
ADVANCED COURSES	Warehouse Operations II	Auto-Body II	Automotive Technician II	Aircraft Technician II	Aviation/Pilot II		
			Diesel Mechanics II		Drone Operation and Maintenance		
			Hybrid Engines		Pilot Training		
			Small Vehicle Mechanics				
GROUP 5: WORKPLACE EXPERIENCE COURSES							
WORKPLACE EXPERIENCE	Parts and Warehousing Workplace Experience	Auto-body Technician Workplace Experience	Automotive Technician Workplace Experience	Aircraft Technician Workplace Experience	Pilot and Flight Crew Workplace Experience	Truck/Bus Operation Workplace Experience	Forklift Operation Workplace Experience

CAREER PROGRAMS IN TRANSPORTATION, DISTRIBUTION, AND LOGISTICS

A quality CTE program delivers all required elements of Illinois' definition of Size, Scope, Quality. CTE program elements include: a sequence of courses, each educational entity offering approved courses provides assurance that the course content includes at a minimum the State course description, meets the State's minimum requirements for course offerings by program, curriculum aligned to state recognized learning standards & industry standards, career pathway guidance, resources to support program/course delivery (licensed & qualified staff, appropriate facilities, adequate equipment, instructional materials, work-based learning experiences, special populations support services, an active affiliated CTSO chapter), articulation/dual credit agreements, documentation of state agency certification or licensing requirements for occupations regulated by law or licensure, & content which prepare students for reflective of current labor & opportunity for workplace experience or a structured capstone course. ***Orientation courses are suggested to be taught at the prior-to-secondary or 9th grade levels. Introductory level courses are suggested to be taught at the 9th-11th grade level. Skill level courses are suggested to be taught at the 10th – 12th grade levels. Workplace Experiences Courses are suggested to be taught at the 12th grade level.***

CAREER PROGRAMS IN TRANSPORTATION, DISTRIBUTION, AND LOGISTICS

Group	State Course Code	State Course Title	State Course Description
Group 1	22151A001	Career Exploration	Career Exploration courses help students identify and evaluate personal goals, priorities, aptitudes, and interests with the goal of helping them make informed decisions about their careers. These courses expose students to various sources of information on career and training options and may also assist them in developing job search and employability skills.
Group 1	21052A002	Introduction to Technology and Engineering (Industrial)	Introduction to Technology & Engineering is comprised of the following areas: Production, Transportation, Communication, Energy Utilization and Engineering Design but is not limited to these areas only. This course will cover the resources, technical processes, industrial applications, material sciences, technological impact and occupations encompassed by that system.
Group 1	20001A002	Exploration of Transportation, Distribution and Logistics	Exploration of Transportation, Distribution, and Logistics courses introduce students to careers that involve the planning, management, and movement of people, materials, and products using any of several modes of transport. Such careers may also involve infrastructure, vehicular maintenance and repair, and operating or managing facilities that hold what is being transported. Therefore, specific course topics vary widely and depend upon the careers being explored.
Group 1	13052A001	Production Technology	Production Technology is a course designed to foster an awareness and understanding of manufacturing and construction technology. Through a variety of learning activities, students are exposed to many career opportunities in the production field . Experiences in manufacturing include product design, materials and processes, tools and equipment including computers, safety procedures, corporate structure, management, research and development, production planning, mass production, marketing and servicing. In construction, students are exposed to site preparation, foundations, building structures, installing utilities, and finishing and servicing structures.
Group 1	11002A001	Communication Technology	Communication Technology is a course designed to foster an awareness and understanding of the technologies used to communicate in our modern society. Students gain experience in the areas of design and drafting, radio and television broadcasting, computers in communication, photography, graphic arts, and telecommunications.
Group 1	20101A001	Energy Utilization Technology	Energy Utilization Technology is a course designed to foster an awareness and understanding of how we use energy in our industrial technological society. Areas of study include conversion of energy, electrical fundamentals, solar energy resources, alternate energy resources such as wind, water, and geothermal; fossil fuels, nuclear power, energy conservation, and computer uses in energy technology. Students use laboratory experiences to become familiar with current energy technologies.
Group 1	20001A001	Transportation Technology	Transportation Technology is a course designed to foster an awareness and understanding of the various transportation customs that make up our mobile society. Through laboratory activities, students are exposed to the technologies of and career opportunities involved in material handling, atmospheric and space transportation, marine transportation, terrestrial transportation, and computer uses in transportation technology.
Group 2	21052A001	Foundations of Technology	The course employs teaching/learning strategies that enable students to build their own understanding of new ideas. It is designed to engage students in exploring and deepening their understanding of “big ideas” regarding technology and apply technological processes to solve real problems and develop knowledge and skills to design, modify, use and apply technology in the following areas: engineering design, manufacturing

CAREER PROGRAMS IN TRANSPORTATION, DISTRIBUTION, AND LOGISTICS

			technologies, construction technologies, energy & power, information & communication technologies and emerging technologies.
Group 2	13004A001	Industrial Safety	Industrial Safety courses provide students with instruction in safe operating procedures related to various trades. Course topics may include the importance of standard operation procedures, agencies and regulations related to occupational safety and hazard prevention, and the dangers of particular materials.
Group 2	20102A001	Energy and Power of Transportation Systems	Energy and Power of Transportation Systems will prepare students to meet the expectations of employers in this industry and to interact and relate to others. Students will learn the technologies used to provide products and services in a timely manner. The businesses and industries of the Transportation, Distribution, and Logistics Career Cluster are rapidly expanding to provide new career and career advancement opportunities. Performance requirements will include academic and technical skills. Students will need to understand the interaction between various vehicle systems, which could include engines, transmissions, brakes, fuel, cooling, and electrical. Students will also learn about the logistics used to move goods and services to consumers, as well as the components of transportation infrastructure.
Group 2	20110A001	Small Engine Repair	Small engine repair is an instructional program that prepares individuals to troubleshoot, service, and repair a variety of small internal-combustion engines, involving both two and four cycle engines used on portable power equipment. Planned activities will allow students to become knowledgeable of fundamental principles and technical skills related to troubleshooting, repairing, identifying parts and making precision measurements. Safety will be a key component of this class. Students will also be exposed to career opportunities related to small engines.
Group 2	20106A001	Beginning Automotive Service	Beginning Automotive Service course emphasizes preventative auto maintenance and automobile troubleshooting. Course content typically includes tune-up, oil change, and lubrication skills; tire replacement, alignment, and balancing; and basic knowledge of brake, cooling, electrical, emission, fuel, ignition, steering, suspension, and transmission systems.
Group 2	13207A003	Beginning Welding	Beginning Welding course enables students to gain knowledge of the properties, uses, and applications of various metals, skills in various processes used to join and cut metals (such as oxyacetylene, shielded metal, metal inert gas, and tungsten arc processes), and experience in identifying, selecting, and rating appropriate techniques. Welding courses often include instruction in interpreting blueprints or other types of specifications.
Group 3	20152A001	Warehouse Operations I	This course provides planned learning activities designed to allow students to gain knowledge and skills applicable to the Parts, Warehousing, and Inventory Management Operations occupation. Students are instructed in areas of safety, inventory management, warehouse operations, and inventory control.
Group 3	20151A001	Distribution and Logistics	Distribution and Logistics courses provide training for entry-level employment in distribution and logistics. This course focuses on the business planning and management aspects of distribution and logistics. To prepare for success, students will learn, reinforce, experience, apply, and transfer their knowledge and skills related to distribution and logistics. Topics could include the comparative advantages of various forms of transportation, distribution networks, processes for tracking large shipments of material, transportation of goods in a safe and secure manner, and packaging.
Group 3	20116A001	Auto-Body I	This course provides learning experiences designed to allow students to gain knowledge and skills in repairing automotive bodies and fenders. Planned learning activities in this course are balanced to allow students to become knowledgeable in the fundamental aspects of auto body repair methods and techniques, and to develop practical skills in the basic operations required to prepare the automobile for final paint application.

CAREER PROGRAMS IN TRANSPORTATION, DISTRIBUTION, AND LOGISTICS

			Instruction emphasizes safety principles and practices, hazardous materials, auto body nomenclature, function of individual components, the use of parts manuals, the identification of replacement parts, the use of auto body fillers, the use of plastic /glass fillers and special body repair tools, refinishing problems, and paint preparation procedures. Practical activities relate to experiences in writing and calculating damage estimates, removing and installing body panels, trim, and glass; straightening by using hammers, bucks, and jacks; and smoothing by filing, grinding, and using fillers. Students also learn to prime the area to be painted and prepare the surface for final paint application. These experiences and skills are related to metal, fiberglass, or urethane components
Group 3	20104A001	Automotive Technician I	This course introduces students to the basic skills needed to inspect, maintain, and repair automobiles and light trucks that run on gasoline, electricity, or alternative fuels. Instructional units include engine performance, automotive electrical system, integrated computer systems, lubrication, exhaust and emission control, steering and suspension, fuel systems, cooling system, braking, and power train.
Group 3	20107A002	Diesel Mechanics I	Diesel Mechanics I courses prepare students to maintain and repair diesel engines and related systems . Specific course topics may include principles underlying diesel engines, analyzing electrical circuits and systems, troubleshooting and repairing cooling systems, testing and repairing air conditioning charging systems, reading and interpreting service manuals, and identifying the principles and components of fuel injection systems. Courses may also cover safety, employability skills, and entrepreneurship.
Group 3	20113A001	Aircraft Technician I	This course provides experiences related to the maintenance, repair, and servicing of a variety of aircraft powerplants. Planned learning activities allow students to become knowledgeable in fundamental principles of aircraft powerplant construction. In addition, students develop technical skills related to avionics, aviation, and airplane power plants. Instruction includes the types, structures, and mechanics of airplanes, electronics, gauge purpose and care, engine mechanics, major component identification, construction techniques, hydraulics, evolution of aerodynamics, and comparison of similar elements in different types of air craft.
Group 3	20053A001	Aviation/Pilot I	This course introduces students to the airplane piloting and the navigation field. Instructional units include principles of flight, the flight environment, aircraft systems and performance, meteorology for pilots, interpreting weather data, and basic navigation.
Group 3	20051A001	Truck and Bus Driving	Truck and Bus Driving courses instruct students in the proper and safe handling and operation of trucks and buses. Strategies for driving in hazardous conditions, observing laws and regulations, loading cargo or passengers, documenting cargo loads, and expectations of driving careers are all typical course topics.
Group 3	20052A001	Light and Heavy Equipment Operation	Light and Heavy Equipment Operation courses enable students to safely operate the equipment used for manufacturing, mining, construction, and utility industries. Typically, courses also include light maintenance principles and techniques.
Group 4	20152A002	Warehouse Operations II	This course provides planned learning activities designed to allow students to gain knowledge and skills in PC based inventory control, parts identification, and customer service. Learning activities in this course emphasize the development of more advanced knowledge and skills than those provided in Warehouse Operations I. Skills introduced in this course include data base operations, supply logistics, supplier relations, and shop operations.
Group 4	20116A002	Auto-Body II	This course provides learning experiences designed to further enhance the students' skills in performing more advanced tasks related to automotive body and fender repair. Learning activities in this course emphasize the successful application of the final paint coat and the preparation that precedes it. Emphasis is also placed upon the identification and correction of imperfections and finish buffing of the final coat.

CAREER PROGRAMS IN TRANSPORTATION, DISTRIBUTION, AND LOGISTICS

			Student learning activities include instruction in safety principles and practices, hazardous materials, types and qualities of paints, colors, and refinishing problems; glass standards and installation, special alignment techniques, customer relations, damage estimating, and insurance adjustments. Student practical activities relate to experiences in estimating collision damage costs, preparing customer bills, removing and replacing glass surfaces, selecting paints, repainting minor and major damages, repainting total car body, drying or baking painted surfaces, post -paint cleanup, and post-paint polishing.
Group 4	20104A002	Automotive Technician II	This course is a continuation of and builds on the skills and concepts introduced in Automotive Technician I. This course includes instructional units in alternative fuel systems, computerized diagnostics, new vehicle servicing, automotive heating and air conditioning, transmissions, testing and diagnostics, drive train and overall automobile performance.
Group 4	20107A003	Diesel Mechanics II	Diesel Mechanics II courses prepare students to maintain and repair diesel engines and related systems . Specific course topics may include principles underlying diesel engines, analyzing electrical circuits and systems, troubleshooting and repairing cooling systems, testing and repairing air conditioning charging systems, reading and interpreting service manuals, and identifying the principles and components of fuel injection systems. Courses may also cover safety, employability skills, and entrepreneurship.
Group 4	20119A001	Hybrid Engines	Hybrid Engines courses introduce students to the fundamentals of hybrid electric vehicles. These courses explore the hybrid power plant and may include such topics as hybrid batteries, high- and low-voltage systems, inverters, safety procedures, hybrid maintenance and diagnostics, and alternative fuels.
Group 4	20109A001	Small Vehicle Mechanics	Small Vehicle Mechanics courses equip students with the knowledge and skill to repair and maintain engines in small vehicles (e.g., motorcycles, all-terrain vehicles, snowmobiles, and mopeds). Topics include (but are not limited to) maintaining frames and suspension, wheels and brakes, and drive trains; servicing fuel, exhaust, and electrical systems; performing tune-ups; and maintaining and repairing engines. Students may also learn safety on the job, employability skills, and entrepreneurship.
Group 4	20113A002	Aircraft Technician II	This course provides experiences related to the maintenance, repair, and servicing of a variety of aircraft powerplants and their associated mechanical systems. Planned learning activities emphasize the development of more advanced knowledge and skill than those provided in Aircraft Technician I. Student technical skill experiences include instruction and activities in aviation construction, shop and maintenance related areas of aircraft, safety principles and practices, as well as continued development of skills associated with aircraft powerplants.
Group 4	20053A002	Aviation/Pilot II	This course is a continuation of and builds on the skills and concepts introduced in Aviation /Pilot I. This course includes instructional units in radio navigation systems, aviation physiology, flight planning and decision making, aviation history, the nature of space, rockets, and space flight, and careers in aviation and aerospace.
Group 4	20099A001	Drone Operation and Maintenance	Drone Operation and Maintenance courses introduce students to the fundamentals of flying drones. Topics covered typically include FAA rules and regulations; types and capabilities of unmanned aircraft; drone piloting; aerial photography and videography; maintenance and preflight procedures; and aeronautical decision-making.
Group 4	20055A001	Pilot Training	Pilot Training courses prepare students to become pilots by participating in flight training, ground school, and simulator instruction. Topics covered typically include preflight operations; flight maneuvering with reference to ground objects; flying at critically slow air speeds and recovering from stalls; takeoffs and landings; controlling and maneuvering an aircraft; cross country flying; night flying; and emergency operation. Other

CAREER PROGRAMS IN TRANSPORTATION, DISTRIBUTION, AND LOGISTICS

			course content may include meteorology, aerodynamics, navigation, physiology, and airfield and flight environments.
Group 5	20198A001	Parts and Warehousing Workplace Experience	Parts and Warehousing Workplace Experience courses provide students with work experience in fields related to distribution and logistics. Goals are typically set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace.
Group 5	20148A001	Auto-body Technician Workplace Experience	Auto-body Technician Workplace Experience courses provide students with work experience in fields related to the maintenance of vehicles and engines. Goals are typically set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace.
Group 5	20148A002	Automotive Technician Workplace Experience	Automotive Technician Workplace Experience courses provide students with work experience in fields related to the operation of vehicles. Goals are typically set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace.
Group 5	20098A001	Aircraft Technician Workplace Experience	Aircraft Technician Workplace Experience courses provide students with work experience in fields related to the maintenance of vehicles and engines. Goals are typically set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace.
Group 5	20098A002	Pilot and Flight Crew Workplace Experience	Pilot and Flight Crew Workplace Experience courses provide students with work experience in fields related to the maintenance of vehicles and engines. Goals are typically set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace.
Group 5	20098A003	Truck/Bus Operation Workplace Experience	Truck/Bus Operation Workplace Experience courses provide students with work experience in fields related to the maintenance of vehicles and engines. Goals are typically set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace.
Group 5	20098A004	Forklift Operation Workplace Experience	Forklift Operation Workplace Experience courses provide students with work experience in fields related to the maintenance of vehicles and engines. Goals are typically set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace.