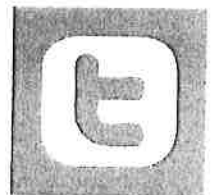


TCD

**TECHNOLOGY CENTER
OF DUPAGE**

Program Outline 2018 - 2019

301 S. Swift Road
Addison, IL 60101
Phone: 630-620-8770
www.tcdupage.org



Technology Center of DuPage Information:

Since 1974, Technology Center of DuPage has given high school students the opportunity to prepare not only for a career, but for the postsecondary education necessary to achieve success in that field. Its unique educational approach – blending academic, occupational, employability, and workplace skills – has served over 24,000 students.

TCD academic curricula are aligned with Illinois Learning Standards. Employability skills (attendance, cooperation, initiative, dependability, teamwork, and safety/sanitation/accuracy) are as important as occupational and academic skills at TCD. Workplace skills such as résumé writing, interviewing, business correspondence, and portfolio development are also an important part of each program's curriculum.

In addition to skills learned in the program, career exploration and networking are available through TCD's work-based learning opportunities. On campus, students operate their own businesses, including a restaurant, bistro, and deli; automotive repair shop; full-service salon; and preschool. Off-campus opportunities include job shadowing and paid internships with TCD's area business partners.

Through Technology Center programs, students have the opportunity to earn transferable college credit; prepare for industry, state, or national licensing and certification exams; qualify for apprenticeships; or earn scholarships and grants toward college. Over the past four years, TCD seniors were awarded over \$1.5 million in scholarships.

Mission Statement:

Technology Center of DuPage will provide an educational environment that supports and encourages individual learning styles, develops occupational skills, fosters professionalism, promotes academic growth, and assists students in discovering their potential.

This mission includes ongoing professional development to maintain a skilled staff that effectively delivers high-quality, individually guided learning experiences.

Vision Statement:

All students attending Technology Center of DuPage will be prepared to successfully transition to post-secondary education and careers.

For more information about TCD or questions about our programs please contact

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Auto Body Repair and Refinishing (College Credit Available)

You love cars, you know what makes them look good, and you love detail work. Learn how to turn that interest into a lucrative, rewarding career. Begin acquiring I-CAR gold class points as you prepare for post-secondary education to earn advanced I-CAR certifications. Our ASE and I-CAR certified instructors will walk you through every facet of auto body repair. You will learn sheet metal and welding techniques, body alignment, finishing and painting, cost/time estimating, plastic, fiberglass and measuring systems, and shop management. Work with industry standard equipment and learn how to turn what you learn today into a successful career.

What will my classes be like?

Our ASE and I-CAR certified instructors will walk you through every facet of auto body repair. You will learn sheet metal and welding techniques, body alignment, finishing and painting, cost/time estimating, plastic, fiberglass and measuring systems, and shop management. Work with industry standard equipment and learn how to turn what you learn today into a successful career.

Career Opportunities (Some require postsecondary education/training):

Auto Body Technician
Paint Technician
Collision Estimator
Insurance Adjuster

Corporate Collision Services Coordinator
Detailer

Automotive Technology (College Credit Available)

You know what high performance sounds like: no whining, no hesitation - just pure, smooth power. Diagnose, tune, and rebuild engines as you prepare for post-secondary education in this dynamic field. Automotive Technician is one of 50 occupations expected to provide the most employment opportunities each year in Illinois.

What will my classes be like?

ASE-certified instructors help you build skills in computerized engine controls; engine tune-up and lubrication; brakes; electrical, fuel, cooling, and exhaust systems; steering and alignment. In the second year, move up to diagnostics and engine building. Qualifying students have the opportunity to participate in Automotive Youth Educational Systems (AYES)—a factory-sponsored training program that combines learning at TCD with an internship through an area dealership.

Career Opportunities:

Automotive Technician
Lubrication Technician
Industrial Technician
Independent Shop Owner

Diesel Technician
Small Engine Technician
Service Writer

Computer Information Systems & Game Design (College Credit Available)

Take your gaming and "modding" talents to a new level while challenging yourself with broader business applications. Be a skilled, valuable resource for all kinds of companies! Are you a creative problem solver? Do you like finding your own solutions to complex puzzles? Or are you a storyteller who enjoys envisioning new worlds, characters, and adventures? Whether gaming or software is your passion, pump up your skills in design, development, and debugging.

What will my classes be like?

Build on what you already know about computers in program and game design. Acquire skills in managing, running, and maintaining systems in any setting, from entertainment to education to business. Game programming and web development require creative, detail oriented people. Design your own games, websites, or apps as you develop skills in writing code, storyboarding, and 3D character development. Use state-of-the-art software and today's programming languages: Unity, Java, HTML, 3D Studio Max, Visual Studio (C#), GameMaker, and Adobe Photoshop. When you complete this course you will be ready for entry level programming positions and prepared for college level coursework.

Career Opportunities (Most require postsecondary education/training):

Game Designer
Entry Level Programmer
Web Page Designer

Construction Trades (College Credit Available)

Whether in remodeling or new construction, the call for experienced craft professionals is growing. Expert carpenters aren't born; they are highly trained through a rigorous certification or apprenticeship process. Hands-on experience, cutting edge tools, and step-by-step learning modules develop your basic talents toward mastery of a trade or preparation for a college-level construction management program.

What will my classes be like?

Step one is tackling those must have basics: job-site safety, the proper use of hand and power tools, and construction math. Develop your carpentry skills in new construction as well as additions, renovations, and repairs on existing structures. You will have hands-on experience in framing through a variety of applications: walls and ceilings, floors, roofing, and windows and doors. Related specialized skills include drywall installation and finishing; trim work; cabinet installation; plan/blueprint reading; and site layout. Projects start small and expand as your skills develop. Additional skills may be added depending on the type of internal or outside projects the program tackles during the school year.

Career Opportunities (Most require postsecondary education/training):

Carpenter Apprentice	Laborer Apprentice
Electrician Apprentice	Estimator
Plumber Apprentice	Construction Manager
Lumber and Wood Products Salesperson	

Cosmetology (College Credit Available)

Are you always getting compliments on your own style and fashion sense? Why not turn what you love into a career? A student who successfully completes 1500 clock hours of work in TCD's state-licensed School of Cosmetology and passes the practical exam will be awarded a certificate from TCD and qualify to take the Illinois State License Exam.

What will my classes be like?

Step behind a stylist's chair in the Technology Center of DuPage "Salon 301," and develop your skills in cuts, colors, perms, nail technology, esthetics, and make-up application. Through practice and instructor demonstrations, you will learn professional-level techniques. There is a serious side to all this glamour! You will be amazed to learn how chemistry, anatomy, and geometry are used every day by cosmetology professionals. Apply your skills through TCD's full-service salon, industry internships, or community projects (theatrical productions, fashion shows, and community service events). It is possible to earn up to 50 hours of college credit through this program. After graduation, use that great head start to obtain an associate's degree, adding even greater value to your state license.

Career Opportunities (Most require postsecondary education/training):

Cosmetologist	Salon Owner
Esthetician	Product Educator
Manicurist/Pedicurist	Platform Artist
Hair Colorist	
Hair Color/Texture Service Specialist	

Criminal Justice (College Credit Available)

Some days are long and get your heart pumping; most days you're working hard gathering evidence or nailing down accurate information for a critical report. Learn the ins and outs of keeping others safe! The Criminal Justice program lays the foundation for students interested in pursuing a career in law enforcement, criminal law, corrections, homeland security, investigative services, forensics, and related public safety career pathways. Cover the basics of traffic law / traffic enforcement; criminal and juvenile law; crime prevention; the court and correction systems; crime scene investigation; and more. Develop your observational, communication, documentation, and "people" skills critical for success in this field. You will also learn which career paths require further training or education.

What will my classes be like?

The program includes simulations, demonstrations, report preparation, lecture, and work-based learning experiences. Viewing the criminal justice system from the ground up will help you understand how a law enforcement career plays out at the local, private, state, and federal levels of service.

Career Opportunities (Most require postsecondary education/training):

Parole and Probation Officer	Criminal Psychologist
Loss Prevention	Police Officer
Correctional Officer	State Trooper
Intelligence Analyst	Corporate Security
Crime Scene Technician	Private Investigation
Forensic Scientist	Federal Law Enforcement Officer/Agent

Early Childhood Education & Care (College Credit Available)

If you love working with children, this program prepares you for a career in early childhood and teaching in many different program formats, which also includes preparation for teaching in elementary schools, preschools, hospitals, or park districts. This program is also an excellent foundation for continuing your education to become an elementary school teacher.

What will my classes be like?

Discover the basic philosophies of early childhood education as well as child growth and development. Learn to maintain a safe and healthy environment. Develop curriculum and learning experiences that are both fun and instructional, then put them to the test in TCD's on-site laboratory preschool for 3 to 5 year olds.

Career Opportunities (Most require postsecondary education/training):

Au Pair
Nanny
Teacher Assistant

Recreational Child Specialist
Family Child Care Provider
Early Childhood Teacher

Electronics Technology (College Credit Available)

If you are fascinated by today's ever-morphing electronic devices, imagine learning how they work – and better still, how they can be improved by YOU. Learn to install, customize, repair, and maintain today's cutting edge electronics technology. First, learn to speak and read the language of electronics: symbols, data sheets, safety measures, and diagrams. Then begin electronic fabrication: the art of soldering, using assembly tools, and system testing procedures. You will build, test, and troubleshoot electronic circuits, using a digital storage oscilloscope to convert, observe and record constantly varying signal voltages. Understand the fundamentals of transformers, capacitors, inductors, and DC circuits.

What will my classes be like?

Projects you can tackle include designing and building a 14 watt RMS stereo amplified system, configuring PC networks, exploring alternative energy generation (solar and wind), and using motor controls, PLCs, and robotics to design your own mini-automated system.

Career Opportunities (Most require postsecondary education/training):

ATM Machine Installer & Repair: CET
Electronic Engineer Aide: A.A.S./ET
Electronic Field Service Technician: CET
Electronic Sales: CET
Electronic Assembler
Electromechanical: IPC Certified

Biomedical Electronics: CET
Sustainable Energy Technician
Wind Turbine Generator Installer
Alternative Energy Engineer
Industrial Maintenance Technician
Automated Process Mechanic

Fire Science / Emergency Medical Technician (College Credit Available)

This program follows the standards of training in NFPA 1001 (National Fire Protection Association) Standard for Firefighters, and Emergency Medical Technician (EMT) National Standards. After age 18, you could become an EMT, apply to paramedic school, and be on the road to future Basic Operations Firefighter Certification at age 21.

What will my classes be like?

The Fire Science program includes safety, fire behavior, rescue/extrication techniques (including use of the "jaws of life"), communications, and equipment use and maintenance. Emergency medical training includes Emergency Medical Responder (EMR), Emergency Medical Technician (EMT), and Healthcare Provider CPR. You must meet the necessary age (at least 18 years old), state, and industry requirements in order to challenge the state or national EMT licensing exam. Enjoy practical experiences in the classroom -- including live "cell burns" -- and the opportunity for internships in emergency rooms, ambulance ride-alongs, crisis drills, or assisting TCD's First Aid Provider on actual calls. You will gain the experience, training, and confidence to transition from our classroom to a job on a Basic Life Support (BLS) ambulance, into a college classroom or paramedic school. In addition, you have the opportunity to receive up to 19 hours of FESHE recognized college credit -- almost a third of your way to an associate's degree!

Career Opportunities (Most require postsecondary education/training):

Firefighter	Fire Prevention Specialist
Emergency Medical Technician	Fire Investigator
Paramedic	Supervisor
Municipal Firefighter	Medical (Nursing, Physician Assistant, M.D.)

Healthcare Foundations

Are you thinking about a healthcare career but need more information? Do you want to know what basic skills and knowledge are required to be successful in this broad, growing industry? Take this first step on the road to discovering whether a career in healthcare is right for you.

What will my classes be like?

Explore the modern Healthcare Delivery System and its broad spectrum of career pathways. Through research, lab activities, and group projects, you will lay a foundation in basic anatomy, physiology, common diseases/disorders, wellness and nutrition, growth and development, medical math, and the legal, ethical, and social issues common to today's healthcare industry. You will be introduced to medical terminology as well as the teamwork, communication, and employability skills critical for success in this field.

Career Opportunities (All require postsecondary education/training):

Health Information Technology	Physical & Occupational Therapy
Medical Assisting	Speech/Language Therapy
Medical Imaging	Surgical Technology

Heating, Ventilation, Air Conditioning & Refrigeration (College Credit Available)

If you like a variety of new challenges every day, explore the opportunities for technicians in HVACR. Skilled HVACR technicians are required for residential construction, industrial equipment service, and building management. Jobs are as varied as sheet metal fabricators/installers, service technicians, balancers, controls technician and welders to name a few.

What will my classes be like?

HVAC provides students with quality education and training that emphasizes physical skills, mental skills, communication skills, technical skills. Students will address a broad range of topics relevant to a challenging and constantly changing industry. The HVACR course content will prepare the students for entry level employment or allow them to continue their education in a postsecondary program.

Career Opportunities (Most require postsecondary education/training):

Sheet Metal Installer
HVACR Equipment Installer
Estimator
Service Technician

Medical Terminology & Healthcare Careers (College Credit Available)

Admission to college healthcare programs (e.g. medical assisting, surgical technology, occupational or physical therapy, and many others) is very competitive. Many colleges require a biomedical terminology course as a prerequisite to admission to such programs. With an opportunity to earn dual credit for a comprehensive biomedical terminology course and overview of health science pathways and careers, this program can be your head start!* As an added benefit, you will learn basic healthcare skills, too.

What will my classes be like?

You will learn extensive biomedical terminology as it relates to each body system and to healthcare careers and medical specialties. Classes are taught by a licensed registered nurse and guest speakers may include other healthcare professionals. You will learn and apply your knowledge through a combination of multimedia assignments, interactive Smartboard activities, authentic lab activities, word games and case studies. In addition to strengthening science and language arts skills through anatomy and medical terminology, you will explore select medical math topics and learn job-seeking skills. The knowledge and skills gained here can increase your likelihood of success as you continue your healthcare education -- and the dual credit you can earn may put you a step ahead of the competition as you pursue your dream!

***Students must maintain a grade of "C", meet all college requirements and attend for the full year to be eligible to earn dual credit.**

College Programs of Study which may require Biomedical Terminology:

Medical Assisting
Radiology
Surgical Technology
Health Information Technology

Physical & Occupational Therapy
Respiratory Therapy
Speech/Language Therapy
Medical Imaging

Multimedia & Television Production (College Credit Available)

What goes on behind the scenes? Lighting, staging, script writing, editing, recording, and animation – these are just a few of the jobs that make today's multi-billion dollar entertainment industry possible. From local news and commercials to multimedia presentations and movies—if you see it on the screen, production specialists made it happen!

What will my classes be like?

You will go behind the scenes of the entertainment industry, learning trade secrets in computer editing, digital video, digital audio, multi-track recording, set design, studio lighting, remote lighting, video graphics, and animation. Additionally, you will work as part of a production team using state-of-the-art software and technology, and learn how good storytelling is critical to the ultimate success of any film or video. Technology Center of DuPage offers private HD production facilities that will help you get ready for a fun and exciting career in media production.

Career Opportunities (Some require postsecondary education/training):

Live Television Camera Operator
Freelance Production Crew
Digital Video Production
Digital Audio Production

Video, Film, and TV Production Assistant
Digital Video and Audio Editing
Scriptwriter

Nursing Assistant Training Program (College Credit Available)

You will benefit from a Basic Nursing Assistant Training Program approved by the Illinois Department of Health (IDPH). Before you leave high school, you will learn the basics of patient care while gaining confidence through clinical experiences. This program is also an excellent head start on the pathway to an advanced nursing career, with college credit while in high school. Most colleges, including College of DuPage require certification as a Nursing Assistant prior to admission to their nursing programs.

What will my classes be like?

See the world through a healthcare provider's eyes as you learn about caring for patients; reporting observations; and understanding body systems, the nature of disease, and common health problems. Master the medical terms and communication skills critical to an effective healthcare environment. You will learn how to safely move, lift, and transport patients; measure and record vital signs; perform personal care and technical skills; and respond to a variety of patient conditions.*

*** Students must have a Social Security Number to enroll in Dual Credit with College of DuPage and to register for the Illinois State Exam along with participation in clinicals. Students must also maintain a 78% or better for a passing grade.**

Career Opportunities (Most require postsecondary education/training):

Nursing Assistant
Home Health Aide
Patient Care Technician

Registered Nurse
Nurse Specialty (Pediatric, Geriatric, Surgical, ICU, etc.)

Precision Engineering & Design Technology

U.S. production is complex and high-tech, required talented, hands-on problem solvers with good math and technical skills. All metal, plastic, and electronic parts, products, and systems are first designed and developed by engineers, backed by the skilled handiwork of technicians and support people. All kinds of students – techies, entrepreneurs, and engineering novices – can find something within this field to fit their interests, abilities, and postsecondary goals.

What will my classes be like?

Discover how 2D modeling software like Revit, AutoCAD (computer aided design), Inventor, or Adobe fuels creativity and innovation in fields as diverse as architecture, construction, manufacturing, civil engineering, biomedical technology and more. The precision engineering field can include precision controls, replication, and fabrication; optics and optical fabrication; nanotechnology; metrology (measurement); interferometry (electromagnetic wave technology); and materials processing. It sounds futuristic, because it is!

If your passion is ultra-precision production, discover how CAD interfaces with CAM (computer aided manufacturing) software tools and robotic production systems. Use 3D parametric solid part modeling software and create prototypes with TCD's 3D printers. You will learn how to control sophisticated Computer Numerically Controlled (CNC) machines and how to program and operate CNC machining and turning centers.

Whether you pursue an apprenticeship or a degree after high school, you will have the skills to succeed in a high-tech field with broad applications and opportunities!

Career Opportunities (Most require postsecondary education/training):

Tool & Die Maker
Welding
Manufacturing Engineer
Mold Making

Industrial Maintenance Mechanic
Quality Control Inspector
CNC Operator/Programmer

Professional Cooking Baking & Service (Pro-CBS) (College Credit Available)

Think you could catch a live fish and learn to fillet it? What is it like (and what does it cost) to cook for and serve a party of 15 -- or 200? How do restaurants survive and thrive in the face of stiff competition? Where does our food come from and how is a safe working and service environment maintained? You will love challenging yourself in the kitchen and TCD's Bistro 301 as you find the answers to these questions. Discover the breadth of this field through research or an industry internship. You could even find yourself trying to keep your cool in an exciting competition.

What will my classes be like?

In your first year, begin with ServSafe® -- a short certification course in food safety for managers -- followed by measurement and kitchen skills common to a range of industry pathways. Complete some basic systems training and the rest of the year is your choice: continuing in a dual credit/certification pathway of Cooking or Baking Curriculum -- or operating the "TCD to Go" quick-serve restaurant. In one year, you have the opportunity to earn certifications and dual credit (both high school and college credit) and solid employability skills.

Kick it up a notch with ProStart® Independent Study!

A self-study of the industry-recognized ProStart® curriculum, developed by the National Restaurant Association Educational Foundation. It's an opportunity to learn, intern, compete, earn scholarships, and network with industry leaders. You will have the opportunity to participate in the Illinois Restaurant Association ProStart and American Culinary Federation (ACF) certification programs. TCD is the only high school in Illinois with ACF certification.

Career Opportunities (Most require postsecondary education/training):

Chef
Pastry Chef
Personal Chef
Food Stylist

Food Journalist
Food photographer
Food and Beverage Manager

Project Lead the Way (PLTW) "Pathway to Engineering" (College Credit Available)

In TCD's "Pathway to Engineering" courses, put science, technology, engineering, and math (STEM) to work solving important, interesting, real-world problems.

The devices and systems that improve our lives and the spaces we inhabit every day were developed through the creative work of engineers, architects, manufacturers, and design technicians. TCD's hands-on learning labs and industry standard technology are the perfect fit for this challenging curriculum developed by nationally acclaimed Project Lead the Way (PLTW), an innovative leader in STEM education (www.pltw.org).

How does PLTW "Pathway to Engineering" work at TCD?

"Pathway to Engineering" is a series of semester-long courses offered over two years. There are three enrollment options:

- A. Full PLTW at TCD:** A student enrolls in the two foundation courses (IED/POE) for the junior year, followed senior year by a one-semester specialized course and the one-semester capstone course.
- B. Completing PLTW at TCD:** Students who have already taken one or both foundation courses (IED/POE) at their high school may continue the PLTW sequence at TCD in their junior or senior year. **NOTE for both A and B options: In order to receive full recognition or credit from PLTW-affiliated colleges and universities, a student must successfully complete the two foundation courses, one specialized course, and one capstone course.**
- C. Partial PLTW Enrollment:** Students interested in engineering who cannot follow the complete PLTW sequence may still enroll in foundation or specialized courses.

PLTW Foundation Courses:

Introduction to Engineering (IED)
Principles of Engineering (POE)

PLTW Specialized Courses:

Civil Engineering & Architecture (CEA)
Computer Science Principles (CSP)
Digital Electronics (DE)
PLTW Capstone Course - Engineering Design & Development (EDD) (College Credit Available)

Career Opportunities (Require postsecondary education/training):

Electrical or Electronics Engineer
Biomedical Engineer
Civil Engineering Technician
Civil Engineer
Computer Hardware Engineer
Software Engineer

Architect
Alternative Energy Engineer
Engineering Sales
Automotive Electronics Engineer
Automated Process Technician

Residential Wiring

Trained technicians transform modern homes and workspaces into networked environments that are functional and efficient.

What will my classes be like?

The Residential Wiring course begins with the fundamentals of electricity, low voltage wiring, high voltage wiring, network wiring, and system planning, as well as rough in, trim out, and retrofitting. The wiring needs in today's homes go beyond the conventional use of electricity and include so much more.

Advanced topics include digital signal theory, conduit installation and bending, system troubleshooting, planning, and testing.

Career Opportunities (Most require postsecondary education/training):

Service Technician
Electrician
Cable Installer

AV System Installer
System Engineer
Estimator

Welding Technology (College Credit Available)

Welding is an art, a trade and a skill used by other trades. More than 75 occupational titles are listed by the U.S. Department of Labor that entail some form of welding-related activities. In DuPage County, welding ranks high on the list of the 30 fastest-growing occupations. These figures do not include more than one million people nationally who currently use welding as part of their occupation, including mechanics, machinists, plumbers and maintenance workers. Add to that the hobbyist, sculptor and other artisans, and you have a sizable number of people needing and/or desiring to learn the art of welding.

What will my classes be like?

Learn and practice the four LAWS -- Arc Length, Travel Angle, Work Angle, and Travel Speed -- as you develop skill in creating fundamental welding joints (butt, T, lap, and corner). You will have the opportunity to work in the four major processes: SMAW (shielded metal arc welding), GMAW (gas metal arc welding), GTAW (gas tungsten arc welding) and oxyacetylene. Discover how all these are utilized in welding, cutting, and brazing. Develop and practice the industry's life skills including safe welding practices conforming to American Welding Society standards, estimate preparation, accurate measuring techniques, shop expansion issues, time management, industrial mathematics, and communication skills. Advanced students will learn to interpret fabrication blueprints, including welding symbols, metal shapes, and specifications

Career Opportunities (Most require postsecondary education/training):

Certified Welder
Production Welding Technician
Welding/Materials Engineer
Welding Inspector

Pipefitter
Structural Metal Fabricator
Structural Iron and Steel Worker
Sculptor/Custom Welding