

**DUTCHESS BOCES CAREER & TECHNICAL INSTITUTE**  
**2023-2024 COURSE OFFERINGS**

All of our programs offer students the opportunity to gain basic entry level career skills as well as the skills necessary to enter a College or Technical school.

\*Please note that CTI Courses are not currently National Collegiate Athletic Association (NCAA) approved.

**Career Exploration** ✓

**Career Exploratory Program**

This course is geared for students in 10<sup>th</sup> and/or 11<sup>th</sup> grade who are classified with disabilities pursuing a Regents Diploma or CDOS Credential. Students will be given a foundation in career skills and will explore a number of career options. Students will have hands-on learning opportunities in a variety of trade areas to prepare them for future study. Additional services include career counseling, career research and work based learning opportunities. Upon successful completion, students may enter CTE programming.

**Agriculture** ✓

**Small Engine Technology I** - Students will explore the theory and operation of two and four cycle engines including basic Carburetion, Lubrication, Ignition, Cooling, and Fuel Supply, Air induction, and Emissions. Students will have the opportunity to dive into real life scenarios in the small engine shop using specialty diagnostic tools and skills they have developed.

**Small Engine Technology II** - Students will dive deeper into two and four cycle engine operation, focusing on engine systems and engine service. Students will explore trade specific tools used by the industry to diagnose and service various engines and vehicles related to power equipment, power sports and marine sports.

**Careers in Animal & Plant Sciences I** - Students cultivate an understanding of the diverse and profitable fields of Agriculture. A wide variety of topics are covered including plant and animal biology and technology, leadership skills, college and career exploration, and career skills development. The program emphasizes hands-on, heads-on and hearts-on learning with on-site projects, public speaking events, work placements, and guest speakers. Field trips to businesses, organizations, colleges, and industry events are also included within the class. In the first year, students focus on five animal science and five plant science careers including Veterinary Technician, Wildlife Manager, Animal and Plant Producer, Floral Designer, Arborist/Tree Climber, Animal and Plant Research Scientist, Landscape Architect, Agriculture Business Manager, and Animal Trainer.

**Careers in Animal & Plant Sciences II** - In the second year, students focus on application of knowledge gained in year one. By applying to college, designing and running a year long research project, and working at off-site placements, students experience their interests in a real-world context. All students become FFA members which connects young agriculturalists to others like them and to industry professionals. Opportunities in leadership, competitions, awards and travel are available to members.

## **Architecture & Construction** ✓

**Construction Trades I & II** - This two-year program is designed to provide 11th and 12th grade students with training in jobsite and shop safety, knowledge of personal protective equipment and OSHA regulations. Students will gain experience working with various hand tools, power tools and construction materials. In addition to the theory and practical experience the student will receive working in and around the CTI campus; field trips, internships and guest speakers will supplement the course. Within an atmosphere of discipline and attention to detail, rigorous academics will integrate construction practices and job readiness instruction with Career literacy, Trade related mathematics, and hands-on skill building activities. Students complete their high school education while being exposed to the various aspects of a career in the construction trades and receive training to apply for, interview for and retain employment. An emphasis is placed on customer service, communication skills and work ethic, helping students become better prepared to approach their future as critical thinkers and responsible citizens.

**Trade Electricity I & II** - This program provides students entry level skills in construction electricity. Courses emphasize job safety, electrical theory, electrical calculations, work ethic, proper tool use and exposure to professional opportunities within the trade. First year focus is on residential installations, followed by second year directed at commercial and industrial installations and include electrical theory, safety/OSHA job-site regulations, commercial/industrial wiring methods, circuit loading calculations, hand & power tool usage, service entrance installation/calculations, and introduction to electric motors/controllers.

Students must provide hand tools and code book.

**\*Heating, Ventilation, and Air Conditioning I & II** - This introductory program will cover the basics of the HVAC trade. It will include basic HVAC/R principles, safety, tools, and professionalism. Students will learn the basics of HVAC electrical wiring, hydronic heat, forced air heat, air conditioning and refrigeration. Students will learn how to install, repair and maintain residential and commercial heating and cooling systems; this includes: proper usage of tools, proper protocol for annual preventative maintenance, and how to properly identify and diagnose issues/malfunctions within HVAC systems.

**Welding & Fabrication I** - This course is the first year of a two year program that is geared toward entry level welding and fabrication using various welding techniques on carbon, stainless steel, and aluminum. The first year welding program will provide the students with all of the safety knowledge and basic skills to work in a shop environment both safely and efficiently preparing them for the second year and completion of the program.

**Welding & Fabrication II** - This second year program is geared toward advanced level welding and fabrication using various welding techniques on carbon, stainless steel, and aluminum. It will provide students with all of the advanced skills and confidence needed to join the welding workforce including resume writing and job interview preparation

## **Arts, Technology & Communication ✓**

**\*Fashion Design & Merchandising I & II** - Fashion Design & Merchandising is a two-year program which offers instruction and practical experience in the skills and theory necessary to be employed within the fashion design and merchandising industry. Students will have the opportunity to learn and practice different functions of the merchandising process, including the development of buying plans, promotional materials, events and sales strategies for multiple retail channels. Students will develop visual research skills through applied design principles, and creativity to select appropriate fabrics for the construction of garments by editing and balancing a ready-to-wear collection. They will develop their skills through visual, technical, digital and verbal presentations. *6 Marist Credits*

**Graphic Design I** - Students will be given the opportunity to explore the exciting world of Graphic Arts, Graphic Design, and Multimedia Arts. Students will develop skills and workplace competencies while exploring the many facets of communication careers. Students use a hands-on learning approach using the ADOBE SUITE of creative software where the emphasis is placed on problem solving skills, and communication techniques. As part of the graduation requirement, all students develop and create projects that will be part of a portfolio used in seeking employment or college acceptance. The majority of the work done is project-based. In year one, students will be introduced to design terms and concepts where they will learn and use Adobe Illustrator, Photoshop and InDesign to make projects that utilize these concepts.

**Graphic Design II** - In year two, students will build upon what they learned in year one with an emphasis on solving more complicated design tasks. They will learn to use digital tools on drawing pads and develop advanced photography skills.

**TV/Film Production I & II** - This course introduces students to the basics of film production and will help students develop a solid foundation in the three phases of production (Pre-Production...scripts, storyboards etc...Production..."Action"...and Post Production...editing, voice overs etc.). In addition, students will develop skill and workplace competencies while exploring the production job market. TV/Film students will gain an understanding of how films and television shows are constructed, technically as well as thematically. Students will be introduced to the basic "building blocks" and formal elements of production (narrative, lighting, cinematography, sound, editing) that make up the film as well as some fundamental principles of analysis, genre, style, performance and storytelling.

## **Education ✓**

**Early Childhood Education I** - Students will explore the physical, cognitive, and social-emotional development of children ages birth to eight. Learners will develop and build teaching and guidance skills and will have the opportunity to write lesson plans and a children's book. Students will design a classroom environment based on developmentally appropriate practices and current state licensing standards.

**Early Childhood Education II** - During the second year of this program students will explore teaching the individual subject areas and will develop practical strategies for guiding children in their daily routines grounded in educational theory. Students will have the opportunity to study a children's author and an educational theorist, and will put their previous study into practice by working off-site in a local early childhood setting.

## **Health Sciences** ✓

**Introduction to Health Occupations** - IHOC is a one year introductory course into the health occupations. We explore many health related careers. Topics such as: professionalism, legal and ethical issues, infection control, growth and development, cultural competence and nutrition will be covered. This course is foundational in nature and a solid starting point for continuing in a variety of health care career options. Introduction to Health Occupations is strongly recommended before taking the Nursing Assistant (CNA) course. The second year option is the Nursing Assistant program.

**Nursing Assistant** - This one-year course for seniors introduces the student to the foundation skills necessary for the study of Nursing. Successful students qualify to take the CNA exam. Successful completion satisfies the health requirement for high school graduation. **Important Note:** Intro to Health Occupations is strongly recommended before taking Nursing Assistant. Work maturity skills and professionalism is essential to success in the Nursing Assistant program

## **Hospitality & Tourism** ✓

**Culinary Arts /Restaurant Management I & II** - Come and explore the art of food! The program explores Culinary Arts, Baking and Pastry and Restaurant Management. We have two full production kitchens that support our forty seat restaurant and catering. As a student in this program, you will learn the real techniques that are needed to be successful in the food service industry. Our Culinary program does not just include culinary theory; it also provides practical knowledge and skills you can apply to your first job and throughout your professional career. You will cover many units of study including sanitation and safety, nutrition and food science, and, of course, culinary and baking techniques. Keep your interest alive and your love for food and cooking fresh by trying new foods and running a real restaurant. Come taste and flavor what we have to offer you!

## **Human Services** ✓

**Cosmetology I** - Cosmetology I is the first year of a 2 year program in which students have the opportunity to achieve 500 hours. This part of the course provides foundational training necessary for the development of basic Hand manipulative skills, safety judgements, proper work habits, and professional attributes necessary to achieve competency in entry-level job skills. Good attendance is essential to this course.

**Cosmetology II** - Cosmetology II is the second year of a 2 year program in which students have the opportunity to achieve 500+ hours. This part of the course builds off of the foundational training necessary to continue to develop hand manipulative skills, safety judgements, increase proper work habits, and professional attributes necessary to achieve competency for achieving and acquiring an entry-level position. The students will more thoroughly develop their foundational skills through practical drill experience and project based learning. Good attendance is essential to this course. At the end of this year, students who successfully complete the program, with at least 1000 hours, will be eligible to apply for the New York State Cosmetology Licensing Exam in order to obtain their license.

## **Information Technology** ✓

**Computer Networking & Cybersecurity** - This 1 year program in Networking+ Computer Training is designed to provide the student with the technical knowledge and skills required for an entry-level position in the information and computer technology career field. The program will participate in the NYS Career Exploration and Internship Program [CEIP]. The course will prepare you to take the TestOut Network Pro and CompTIA Networking+ Certification Examination.

**Computer Hardware Technology** - (Formerly called A+ Computer Repair.) This 1-year program in Computer Hardware Technician is designed to provide the student with the technical knowledge and skills required for an entry-level position in the information and computer technology career field. The program will participate in the NYS Career Exploration and Internship Program [CEIP]. The course will prepare you to take the TestOut PC Pro and CompTIA A+ Certification Examinations. Prerequisite: Math Course A

## **Law and Public Safety** ✓

**Security & Law Enforcement I** - The first year of the program is designed as an introduction to the field of criminal justice, covering the components of the criminal justice system (police, courts, corrections), the interactions of these components through the steps in the criminal justice process, as well as the constitutional requirements of due process of law. Students will become familiar with the law, specifically the New York State Penal Law, the Criminal Procedure Law, and the Vehicle and Traffic Law. Students will also be exposed to controversial topics, such as search and seizure, use of force and police defensive tactics. Students will receive a realistic introduction to the popular subject of crime scene investigation. Students will finish the year by demonstrating their knowledge and skills through realistic scenario-based training.

**Security & Law Enforcement II** - The second year of the program begins with an introduction to criminology, including crime reporting, theories of crime and crime causation. After a brief examination of juvenile delinquency, the focus of the program shifts heavily to the investigation of various types of crimes. Finally, the emphasis of the second year leads to the field of security, including terrorism, threat assessment, as well as crime prevention. Students will have the opportunity to complete training and obtain certifications in CPR and First Aid, an Introduction to the National Incident Management System, an Introduction to the Incident Command System, and both the Pre-Service (8-hour) and In-Service (16-hour) New York State Security Guard Training. Students who complete two years of the Security & Law Program are eligible for 1 unit of English, 1 unit of Science, and 1 unit of PE.

## **Transportation** ✓

**Automotive Technology I** - In this program students work with skilled instructors to learn repair techniques on foreign and domestic cars and light trucks using the latest techniques and computerized diagnostic equipment. Throughout the rigorous two-year program, students will learn to diagnose and repair various vehicle systems and work on real cars with state-of-the-art electronic testing equipment. While working in a modern service and repair facility, students gain daily practical experience repairing vehicles provided by Dutchess BOCES, students, and faculty. Completion of this program ensures your readiness for entry-level employment in the automotive industry. Year 1 Topics Include: Lubrication & Cooling Systems, Brakes, Steering, Suspension

**Automotive Technology II** - Students dive deeper into the topic of Automotive in Year 2. Topics include: Electrical System, Engine performance, Manual Drive Train, and Automatic Transmission. Selected students may be eligible for internship experience at local repair facilities during the second year of this program.

**Related Academics** ✓

**Career Literacy (CTE English)** - All programs offer .5 credit per year in high school English, with the exception of Career Exploratory.

**\*MST** - This Math-Science-Technology class fulfills the requirement for a third unit of Math or Science credit. **\*This class will no longer be offered starting next school year.**

**Integrated/Specialized Science and Math** - Please refer to the CTI Academic Reference Guide.

*For more details on our programs, please visit our website [www.dcboces.org/CTI](http://www.dcboces.org/CTI) or call Kirstin Litwin or Deanna Pillius at 845.486.8001*