SAUNDERS
TRADES & TECHNICAL HIGH SCHOOL

MAGNET PROGRAMS

CTE PATHWAYS

Saunders Trades & Technical High School offers 21st-century career and technical education (CTE) programming that that prepares students for an entry-level job, college or both.

Saunders High School offers ten CTE magnet programs, all of which are endorsed by the New York State Education Department

Technical Programs: Architecture, Biology & Chemical Technology, Electronical & Computer Circuitry

Occupational Programs: Culinary Arts, Graphics Design, Cosmetology & Barbering, Fashion Design

Vocational Programs: Automotive Technology, Heating & Air Conditioning, Construction Technology

- Incoming freshmen will be placed in specialized programs they select on the School Choice application. Once a student is accepted to a Saunders program, he/ she is committing to the 4-year sequence. There are no program changes.

- All students must complete and pass the New York State required course, Career and Financial Management.

- The school day is arranged around a nine-period schedule with vocational, occupational and technical programs in a three-period block (10th, 11th, 12th grades)

SAUNDERS TRADES & TECHNICAL HIGH SCHOOL

MAGNET PROGRAMS

CTE PATHWAYS

- All 12th grade magnets end in a mandatory senior exit project in order to graduate from Saunders Trades & Technical High School. This includes research, hands-on component, practical, and/or verbal presentations.

- Any student that does NOT COMPLETE their assigned magnet program, Senior exit project, and/or NYS approved Industry exam will NOT graduate from Saunders Trades and Technical High School and will not cross the stage at our graduation. Students will be transferred to another YPS high school for graduation purposes and receive their diploma from his/her new high school.

SAUNDERS TRADES & TECHNICAL HIGH SCHOOL

ARCHITECTURE

PROGRAM OVERVIEW

The Architectural Technology program offers courses in residential and commercial design, building materials, construction documents, design graphics, and computer-assisted design and drafting (Auto-CAD). This comprehensive program provides students with the discipline and critical thinking skills necessary to transfer to a broad range of colleges & universities and the training and technical skills to gain employment with large amount of firms in this area.

Yonkers P-TECH at Saunders is a four to six year program (grades 9-14) focused on engaging students in hands-on, project-based learning to be successful in career fields such as architecture, engineering construction, surveying, and landscape design. Starting in the 10th grade, students begin earning college credit through dual enrollment courses. Students who successfully complete the six year program earn a high school diploma and an associate's degree in Civil Technology at no cost from Westchester Community College

ARTICULATION AGREEMENT: Westchester Community College P-TECH Program
MAGNET EXIT PROJECT: Architecture Open House

TECHNICAL SKILLS

AutoCAD Drafting, Manual Drafting, 3D Printing, 3D Model Making, Laser Cutting, Blueprint Reading, Rendering, Estimating

CAREER OPPORTUNITIES

Architect, architecture drafting, mechanical drafting, civil designer, civil engineers, estimators, urban planner.

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BIOLOGY & CHEMICAL TECHNOLOGY

PROGRAM OVERVIEW

Students in the Biology and Chemical Technology magnet will learn the techniques necessary to work in a college or industrial science lab. Students will understand the scientific approach to observation and inquiry. Students will also be well prepared to continue their education in laboratory sciences such as biology, environmental science, and chemistry. Students will be given the opportunity to explore various careers in science through shadowing and school to work programs.

Each student must do an individual research project that he or she will present in the end of the senior year. The projects vary as do the careers. Some examples of past projects include:

- Can methyl paraben in personal care products be quantified?
- Can oysters be reintroduced into the Hudson River?
- Is the oxybenzone in our suntan lotion really degrading?
- Can sunflowers be used to remove lead from water?

Students have presented their projects at local science fairs as well as ecological symposiums. Guest lecturers enhance our programs and enrich our students by sharing real world and career related experiences.

Student experiences are not limited to in-class activities. The course includes involvement with Community partners such as Groundwork Hudson Valley, The Center for the Urban River at Beczak, The science barge, and Trout in the classroom. Students can also take the AP exam in Environmental Science their senior year as well as earn credit from SUNY Westchester for their senior year.

ARTICULATION AGREEMENT: Westchester Community College
MAGNET EXIT PROJECT: Tech Prep Day

TECHNICAL SKILLS

Basic solution chemistry, Water Quality analysis, Soil analysis, Organism inventories, Bacteria culture, Algae culture, Basic hydroponics, Gel electrophoresis, Spectrophotometry, Light microscopy, Waste disposal, OSHA Safety Standards, Data analysis

CAREER OPPORTUNITIES

Biochemists and Biophysicists, Biological Technicians, Environmental Scientists, Environmental Engineers, Urban and Reginal Planners, Environmental Law, Forensic Scientist, Doctor, Pharmacist, Teacher

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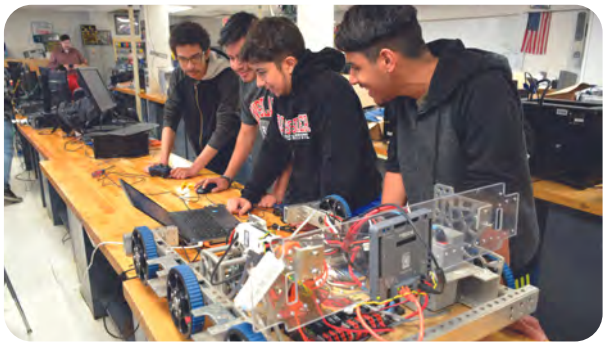

ELECTRONIC & COMPUTER CIRCUITRY

PROGRAM OVERVIEW

Electronics and Computer Circuitry (ECC) students explore the latest technology in personal computing, computer networking, computer programming, cybersecurity, AI, Internet of Things (IoT) and robotics. Students use soldering irons, hand tools, meters and oscilloscopes to troubleshoot and build computers, robots, amplifiers, speakers, wireless devices, power supplies and more.

Sample units of study include electronic components, breadboarding/prototyping and soldering, DC series and parallel circuits, ladder networks, motors, digital logic, computer hardware, computer operating systems, networking, security, optimizing and troubleshooting PC systems. Students also learn solid modeling and 3D printing for designing and building electromechanical systems.

Students who complete this program are equipped with the skills needed for employment in the electrical/electronics, computer and robotics industry, and are often recruited by local companies. Graduates frequently pursue further training at technical schools, colleges, or in the military.

ARTICULATION AGREEMENTS: Westchester Community College, College of Westchester
MAGNET EXIT PROJECT: Tech Prep Day

TECHNICAL SKILLS

Use of basic hand tools, Soldering, Use of Digital Multimeters, Use of Oscilloscope, Use of Printed Circuit Board, Design Software, AutoCad, AutoDesk Inventor, Use of Arduino, Use of 3D printers, Use of routing table, Fabrication of networking cables, Building and troubling PCs, Use of Computer Aided Engineering Software, Use of Wifi/Bluetooth capable microcontrollers and sensors

CAREER OPPORTUNITIES

Computer programmer and analyst, robotics, technical support specialist, web developer, systems engineer, network engineer, field service technician, IT support technician, IT support administrator, electronics technician, bench technician

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CULINARY ARTS

PROGRAM OVERVIEW

Culinary Arts is a hands-on food preparation program that provides students with broad exposure to the art and science of cooking. Students will develop their culinary skills learning the ProStart curriculum in food production, dining etiquette, customer service, food safety and sanitation.

Students in the Culinary Arts program work toward earning ProStart certification. They learn how to skillfully prepare and serve meals that look as good as they taste. Working alongside experts in the field, these chefs-in-training develop a variety of highly sought-after culinary skills and techniques through hands-on training and daily work experiences. Equally important is students' increased knowledge of food science, diet and nutrition.

Students have the opportunity to earn a Career and Technical Endorsement on their diploma by successfully passing the industry-standard Precision performance assessment.

ARTICULATION AGREEMENTS: Westchester Community College, Monroe College
MAGNET EXIT PROJECT: Annual Cake Walk

TECHNICAL SKILLS

Safe & sanitary food handling, ServSafe certification, Operating kitchen equipment, Operating baking equipment, Restaurant operations, Knife skills, Hot food preparation, Cold food preparation, Cake decorating skills, Preparation methods of: cooking, breads, cakes, custards, pies, pastries

CAREER OPPORTUNITIES

Chef, Caterer, Baker, Food & Beverage Manager, Restaurant Manager, Nutritionist, Entrepreneur

SAUNDERS TRADES & TECHNICAL HIGH SCHOOL

COSMETOLOGY AND BARBERING

PROGRAM OVERVIEW

The Cosmetology and Barbering program is comprised of classes and labs that follow the New York State approved curriculum required for licensing. Students must complete 1000 hours of instruction in classes such as: Lab (10-12); Cosmetology & Barbering related Art (11); Cosmetology & Barbering related
Chemistry (12); Cosmetology & Barbering Theory (12); Career and Financial Management (9); and Cooperative work experience (12).

Upon completion of their thousand-hour mandate, students are eligible to sit for the New York State Boards in Cosmetology. Students must pass two components in order to gain licensure: the written exam, which consists of technical questions associated with the magnet; and the practical exam, which determines the student's proficiency in a variety of hands-on work.

This Field offers many career opportunities such as: hair styling; haircoloring specialty; esthetics; nail specialty; make-up artistry and more. Students with an artistic flair and interest in this field will excel in this program.

ARTICULATION AGREEMENTS: College of Westchester, SUNY Morrisville
MAGNET EXIT PROJECT: Annual Hair and Makeup Show

TECHNICAL SKILLS

Properties of the Hair/Scalp, Shampooing/Conditioning, Hair Cutting, Artistry in Hair Styling, Hair Coloring, Manicures, Pedicures, Skin Care, Make Up Application, Salon Business Practices

CAREER OPPORTUNITIES

hair stylist, manicurist/pedicurist, salon owner, make-up artist, skin or nail technician, desairology, hair show coordinator, state licensing examiner, esthetician, color technician & perm technician

SAUNDERS TRADES & TECHNICAL HIGH SCHOOL

FASHION DESIGN

PROGRAM OVERVIEW

The Fashion Design technology program is a four-year career and technical education program in the occupational studies branch at Saunders Trades and Technical High School devoted to the teachings on how garments are made for various apparel segments in the fashion industry. Students explore the fundamentals of garment construction such as professional draping, patternmaking, and professional sewing techniques. Students are prepared with the necessary tools to develop professional fashion design portfolios utilizing various fashion illustration and concept design methods.

Students will be exposed to the overall workings of a professional design studio in the areas of apparel and textile design. Students will gain the ability to execute a design idea from sketch to finished garment. Emphasis will be placed upon problem solving, creative thinking, the use of industry terminology, tools of the trade as well as 21st century career readiness skills.

ARTICULATION AGREEMENTS: College of Westchester, SUNY Oneonta, SUNY Delhi, Westchester Community College
MAGNET EXIT PROJECT: Annual Fashion Show

TECHNICAL SKILLS

Fashion Illustration, Garment Construction, Draping/Patternmaking, Trend Forecasting, Textile Science, Industrial Sewing, Business Focus on Merchandising and Marketing

CAREER OPPORTUNITIES

Fashion Designer, Merchandiser/buyer, Advertiser/promoter, Visual display specialist, Retail manager, Production manager, Technical designer, Clothing Alterations, Seamstress, Textile Designer

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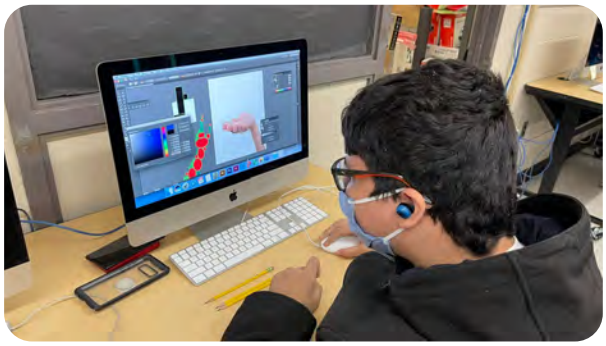

GRAPHIC DESIGN

PROGRAM OVERVIEW

The Graphics Design curriculum offers a mix of academic and hands-on coursework. Students are exposed to digital design, traditional art methods, and professional workplace practices. The program offers instruction to prepare students for careers that focus on visual storytelling and using word and image to develop creative concepts. Students learn about emerging technologies and gain experience working with a Xerox Color Press printer, Canon scanners, and Apple computers. They are trained in industry standard software, including Adobe Illustrator, Photoshop, and InDesign, and are taught not only technical skills, but also how to think creatively. Graduates of the program demonstrate a mastery of these skills and are poised for positions in the industry as graphic designers, multimedia designers, package designers, and more.

During their senior year, students become curators of their own work, gathering their past pieces into a final portfolio. Their portfolios include observational still-life drawings and an array of digital work, including posters, package design, photo composites, and branding design. At the end of the year, students are required to present their work to a Portfolio Review panel of their peers and industry professionals. The seniors explain and defend their work and receive feedback. This experience helps prepare them for public speaking in college and the workplace. Portfolio Review also serves as a venue to showcase the artwork created by lowerclassmen, which further instills a sense of family and community among students in the program. The review provides an opportunity for all the students to see each other's work, which isn't always possible in the classroom setting.

Students in the Graphic Communications program gain specific practical and professional skills that give them an advantage over other college and job applicants. The program incorporates as much real-world work-based learning into the curriculum as possible.

ARTICULATION AGREEMENTS: College of Westchester, SUNY Farmingdale
MAGNET EXIT PROJECT: Annual Portfolio Review

TECHNICAL SKILLS

Adobe Creative Suite, Digital Photography, Marketing, Advertising, Typography, Professional Printing

CAREER OPPORTUNITIES

Illustration, Desktop Publishing, Digital Photography, Pre-Press Technician, Video Editing, Videography, Web Design, Animation, Commercial Photography, Film & Video Production, Graphic Design, Public Relations & Marketing

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AUTOMOTIVE TECHNOLOGY

PROGRAM OVERVIEW

Automotive Technology is a four-year program designed to provide students with basic mechanical knowledge and skills. As a part of the program, students gain knowledge and skills through a combination of theoretical study and hands-on lab work. Students will review and receive training on brake systems, engine performance diagnosis, suspension and steering, electronic control systems, and on-board computerized engine control systems diagnosis on automobiles and light trucks.

This program is the first step in preparing an individual for a career in the technical repair field. Over the course of the program, students are provided with the opportunity to earn a Career and Technical Endorsement on their diploma by successfully passing the industry-standard Precision Exam technical assessment.

ARTICULATION AGREEMENTS: Lincoln Tech, Alfred State College, SUNY Delhi, NYADI: The College of Automotive & Diesel Technology

TECHNICAL SKILLS

Tool Use & Safety, Engine Performance, OSHA Safety Standards, Braking Systems, Suspension and Steering, Electronic Service, Information Systems

CAREER OPPORTUNITIES

Electrical technician, wheel alignment technician, brakes technician, automotive technician, auto sales, automotive parts specialist, auto reconditioning

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CONSTRUCTION TECHNOLOGY

PROGRAM OVERVIEW

The Construction Technology program teaches students the essential skills needed to begin a career in the building and construction trades utilizing the construction of a full size house project, students will gain real-world knowledge and hands-on experience in the fundamental components of carpentry, drywall, painting, framing, roofing, floor installation, door and window installation, blueprint reading, drafting, siding, electrical wiring, plumbing, trim installation, proper tool use, and OSHA safety training.

Students will develop and demonstrate integrated academics and employability skills through class activities, projects, live clinic, community service and professional development. Senior students will have the opportunity to do co-op work in the field during school hours through our work based learning program. Students are also provided with the opportunity to earn a Career and Technical Endorsement on their diploma by successfully passing an industry-standard technical assessment.

ARTICULATION AGREEMENTS: Alfred State College, SUNY Delhi, SUNY Morrisville
MAGNET EXIT PROJECT: Annual Construction Technology Showcase

TECHNICAL SKILLS

Blueprint reading, Drafting, OSHA Safety Standards, Framing, Roofing, Siding, Trim Install, Drywall, Electrical Wiring, Plumbing, Window Installation, Door Installation, Floor Installation, Painting

CAREER OPPORTUNITIES

Carpenter, Framer, Plumber, Electrician, Architect, Home Energy Analysis Technician, Building Inspector, Cost Estimator, Engineer, Mason, HVAC Technician, Building Maintenance

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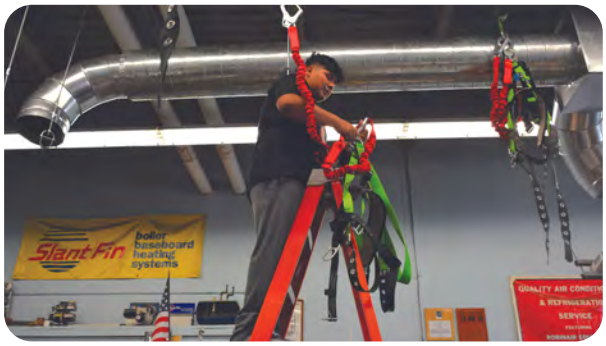

HEATING, VENTILATION & AIR CONDITIONING

PROGRAM OVERVIEW

Heating, Ventilation, Air Conditioning/Refrigeration (HVAC) introduces students to a major subdiscipline of mechanical engineering - the principles and fundamentals of heating, ventilation, air conditioning, and refrigeration systems. Instruction focuses on the fabrication, system installation, use of diagnostic equipment and the maintenance and troubleshooting of these various systems. Students learn how to work with electrical testing equipment; plastic, steel and copper pipe and tubing; sheet metal; hand tools; and specialized tools of the trade.

Students meeting all requirements of the Heating, Ventilation, Air Conditioning/Refrigeration program, including successful completion of practical and written assessments, will receive a Technical Endorsement on their Regents Diploma.

Students are also eligible to participate in career competitions through SkillsUSA

ARTICULATION AGREEMENTS: Lincoln Tech, SUNY Delhi
MAGNET EXIT PROJECT: Annual HVAC Competition

TECHNICAL SKILLS

AutoCAD Drafting, Tool Use and Safety, Soldering, Sheetmetal Fabrication, Electrical Wiring, Braising, Machinery Operation, Troubleshooting, OSHA Certification, EPA Certification

CAREER OPPORTUNITIES

HVAC Technician, Building Maintenance, Plumber, Business Owner, Pipe Fitter, Oil Burner & Heating Mechanic, General Contractor, HVAC Installer, Refrigeration Technician, Specifying engineer

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