Schuylkill Technology Center

The Schuylkill Technology Center is an elective option of high school course selection designed to provide the basic technical skills to assist all students to prepare for a career in tomorrow's high tech workforce and enable students to get a "head start" on post-secondary career. Programs offer basic entry-level skills with "hands-on" training on computerized and technical equipment. Students must have completed the ninth grade to enroll in the Technology Center. All Schuylkill Technology Center Programs of Studies have articulation agreements to various post-secondary/ higher education institutes, thus providing for advanced placement and advanced skill opportunities. More information regarding program of studies and articulation agreements can be obtained from Schuylkill Technology Center- Guidance Department at 570-544-4748 and 570-874-1034 or on the web at **www.stcenters.org .**

Schuylkill Technology Center
Program of Study (POS)

The Carl D. Perkins Career and Technical Education Improvement Act of 2006 requires the development and implementation of career and technical programs of study (POS). Programs of Study incorporate secondary education and postsecondary education elements; include coherent and rigorous content aligned with challenging academic standards and relevant career and technical content in a coordinated, non-duplicative progression of courses that align secondary education with postsecondary education to adequately prepare students to succeed in postsecondary education; may include the opportunity for secondary education students to participate in dual or concurrent enrollment programs or other ways to acquire postsecondary education credits and lead to an industry-recognized credential or certificate at the postsecondary level or an associate or baccalaureate degree.

Programs of Study Consist of:

- ✓ High Priority Occupation (HPO) from PA Department of Labor and Industry
- ✓ Align POS selection from PA approved CIPs
- ✓ Scope and Sequences of Courses
- ✓ Integration of Academics Standards
- ✓ Recognized PA Industry Certifications aligned to CIPs
- ✓ Statewide articulations for POS students to postsecondary institutions that continue career pathways
- ✓ Assessments for end of program at secondary and postsecondary (e.g. NOCTI)

Schuylkill Technology Center's Career Clusters and Program of Study

Architecture and Construction

- Carpentry
- Masonry
- Plumbing & Heating Technology
- Residential/Industrial Electricity

Health Science

- Health Careers

Human Services

- Cosmetology
- Culinary Arts
- Early Child Care & Education
- Landscape & Floral Design

Information Technology

- Computer Information Systems

Manufacturing

- Computer Aided Drafting
- Electromechanical Technology
- Machine Trades Technology
- Welding Technology

Marketing Sales & Service

- Marketing

Transportation, Distribution & Logistics

- Automotive Technology
- Collision Repair & Custom Refinishing
- Diesel Technology
- Small Engine Technology

Schuylkill Technology Center's
Career Clusters and Program of Study
Descriptions

Architecture and Construction

Carpentry
An instructional program that prepares individuals to apply technical knowledge and skills to lay-out, fabricate, erect, install and repair structures and fixtures using hand and power tools. This program includes instruction in common systems of framing, construction materials, estimating, blueprint reading and finish carpentry techniques.

M**asonry**
An instructional program that prepares individuals to apply technical knowledge and skills in the laying and/or setting of brick, concrete block, glass block, hard tile, marble and related materials using trowels, levels, hammers, chisels and other hand tools.

Plumbing & Heating Technology
A program that prepares individuals to practice as licensed plumbers by applying technical knowledge, safety and skills to lay out, assemble, install and maintain plumbing fixtures and systems for steam, natural gas, oil, hot water, heating, cooling, drainage, lubricating, sprinkling and industrial processing systems in home and business environments. Includes instruction in source determination, water distribution, waste removal, pressure adjustment, basic physics, technical mathematics, blueprint reading, pipe installation, pumps, brazing and soldering, plumbing inspection and applicable codes and standards.

Residential/Industrial Electricity
An instructional program that prepares individuals to apply technical knowledge and skills necessary to install, operate, maintain and repair electrically-energized residential, commercial and industrial systems, and DC and AC motors, controls and electrical distribution panels. Instruction emphasizes practical application of mathematics, science, circuit diagrams and use of electrical codes and includes blueprint reading, sketching and other subjects essential for employment in the electrical occupations. Reading and interpretation of commercial and residential construction wiring codes and specifications, installation and maintenance of wiring, service and distribution networks within large construction complexes are also critical components of the program.

Health Science

Health Careers

A cluster program with a combination of subject matter and experiences designed to prepare individuals for entry-level employment in a minimum of three related health occupations under the supervision of a licensed health care professional. Instruction consists of core course content with clinical experiences in one or two health related occupations. The core curriculum consists of planned courses for introduction of health careers, basic anatomy and physiology, medical terminology, legal and ethical aspects of health care and communications and at least three planned courses for the knowledge and skills for the occupational area such as medical assisting, ward clerk, nursing assisting, etc.

Human Services

Cosmetology
An instructional program that prepares individuals to apply technical knowledge and skills related to experiences in a variety of beauty treatments including the care and beautification of the hair, complexion and hands. Instruction includes training in giving shampoos, rinses and scalp treatments; hair styling, setting, cutting, dyeing, tinting and bleaching; permanent waving; facials; manicuring; and hand and arm massaging. Bacteriology, anatomy, hygiene, sanitation, salon management including record keeping and customer relations are also emphasized. Instruction is designed to qualify pupils for the licensing examination.

Culinary Arts
An instructional program that prepares students for employment related to institutional, commercial or self-owned food establishments or other food industry occupations. Instruction and specialized learning experiences include theory, laboratory and work experience related to planning, selecting, preparing and serving of quantity food and food products; nutritive values; use and care of commercial equipment; safety; and sanitation precautions. Instruction skills are provided to individuals desiring to become employed in all areas of the food service industry at entry level.

Early Child Care and Education
An instructional program that prepares individuals for a variety of occupations in child care and guidance often under the supervision of professional personnel in child or day care centers. This program includes instruction in growth and development; nutrition; program planning and management; safety; behavior guidance; play activities; child abuse and neglect; parent-child personal relationships; learning experiences for children; and laws, regulations and policies relating to child care services.

Landscape and Floral Design
An instructional program having a combination of organized subject matter and practical experiences that generally prepares individuals to produce, process and market plants, shrubs and trees used principally for ornamental, recreational and aesthetic purposes and to establish, maintain and manage horticultural enterprises.

Instruction emphasizes knowledge, understanding and application important to establishing, maintaining and managing horticultural enterprises such as aboriculture, floriculture, greenhouse operation and management, landscaping, nursery operation and management and turf management.

Information Technology

Computer Information Systems
An instructional program that prepares individuals to apply technical knowledge and skills to support the design and development of software applications. This program is designed to provide the capacity to prepare and interpret process and data models, develop and structure software components and to validate the functionality, usability and reliability of those components. Validation skills include testing and debugging. System, component and user documentation is to be performed throughout the process. This program will provide students with the ability to integrate new and existing components. Students will receive instruction in at least two programming languages including at least one procedure-oriented language and one object and visually-oriented language. This course provides a thorough practical knowledge of the concepts, theories, logic and critical thinking skills required when building software applications. Students completing the program will possess a basic technical foundation needed to pursue postsecondary degrees leading to a career as a software developer, analyst project leader or in the management of information technologies. Students may prefer to immediately enter the labor market in an entry-level position as developer or analyst.

Manufacturing

Computer Aided Drafting
An instructional program that generally prepares individuals to apply technical knowledge and skills as each relates to gathering and translating of data or specifications including basic aspects of planning, preparing and interpreting mechanical, architectural, chemical, structural, civil, pneumatic, marine, electrical/electronic, topographical and other drawings and sketches used in various engineering fields. Instruction is designed to provide experiences in drawing and CAD; the use of reproduction materials, equipment and processes; the preparation of reports and data sheets for writing specifications; the development of plan and process charts indicating dimensions, tolerances, fasteners, joint requirements and other engineering data; the development of models; and drafting multiple view assembly and sub-assembly drawings as required for manufacture, construction and repair of mechanisms.

Electromechanical Technology
An instructional program that prepares individuals to apply basic engineering principles and technical skills in both the mechanical and electrical fields. Instruction is planned to provide preparation in the design, development and testing of

electromechanical devices and systems such as automatic control systems, servomechanisms, vending machines, elevator controls, missile controls, tape-control machines and auxiliary computer equipment. Instruction also includes feasibility testing of engineering concepts, systems analysis including designs, selection and testing and application of engineering data and the preparation of written reports and test results in support of mechanical and electrical engineers.

Machine Trades Technology
An instructional program that prepares individuals to apply technical knowledge and skills in all aspects of shaping metal parts. Instruction involves making computations relating to work dimensions, tooling and feeds and speeds of machining. Emphasis is placed upon bench work and the operation of lathes, power saws, milling machines, grinders, drills and computer operated equipment (CNC and CIM). Instruction also includes the use of precision measuring instruments such as layout tools, micrometers and gauges; methods of machining and heat treatment of various metals; blueprint reading; and the layout of machine parts. Instruction prepares students to operate all types of hand and computer controlled machines.

Welding Technology
An instructional program that prepares individuals to apply technical knowledge and skills in gas, arc, shielded and non-shielded metal arc, brazing, flame cutting. Hand, semi-automatic and automatic welding processes are also included in the instruction. Students learn safety practices and types and uses of electrodes; properties of metals; blueprint reading; electrical principles; welding symbols and mechanical drawing; use of equipment for testing welds by ultrasonic methods and destruction and hardness testing; use of manuals and specification charts; use of portable grinders and chemical baths for surface cleaning; positioning and clamping; and welding standards established by the American Welding Society, American Society of Mechanical Engineers and American Bureau of Ships.

Marketing Sales & Service

Marketing
An instructional program that provides instruction in the fields of sales, distribution and marketing operations and focuses on the process and techniques of direct wholesale and retail buying and selling operations. This program is concerned with marketing, sales, distribution, merchandising and management including ownership and management of enterprises engaged in marketing. Marketing education programs prepare individuals to perform one or more marketing function such as selling, pricing, promotion, product/service management, distribution, financing and marketing information management. In addition, instructional programs include varying emphasis on technical knowledge of products and/or services marketed; related communication, economic, technological and computation skills; and abilities and attitudes associated with human relations. The program may also include management functions associated with owning and operating a business. Sales, distribution and marketing operations prepares individuals for occupations in such

businesses as retail and wholesale trade, finance, insurance, real estate, entertainment, hospitality, food service, communications, storage and distribution.

Transportation, Distribution & Logistics

Automotive Technology
An instructional program that prepares individuals to apply technical knowledge and skills to engage in the servicing and maintenance of all types of automobiles and light trucks. This program includes instruction in the diagnosis and testing, including computer analysis, of malfunctions in and repair of engines, fuel, electrical, cooling and brake systems and drive train and suspension systems. Instruction is also given in the adjustment and repair of individual components and systems such as cooling systems, drive trains, fuel system components and air conditioning and includes the use of technical repair information and the state inspection procedures.

Collision Repair & Custom Refinishing
An instructional program that prepares individuals to apply technical knowledge and skills to repair damaged automotive vehicles such as automobiles and light trucks. Students learn to examine damaged vehicles and estimate cost of repairs; remove, repair and replace upholstery, accessories, electrical and hydraulic window and seat operating equipment and trim to gain access to vehicle body and fenders; remove and replace glass; repair dented areas; replace excessively damaged fenders, panels and grills; straighten bent frames or unibody structures using hydraulic jacks and pulling devices; and file, grind and sand repaired surfaces using power tools and hand tools. Students refinish repaired surfaces by painting with primer and finish coat.

Diesel Technology
This is an instructional program that prepares individuals to apply technical knowledge and skills to the specialized maintenance and repair of trucks, buses, and other commercial and industrial vehicles. The program includes instruction in diesel engine mechanics, suspension and steering, brake systems, electrical and electronic systems, preventive maintenance inspections, drive trains, HVAC systems, and auxiliary equipment installation and repair.

Small Engine Technology
An instructional program that prepares individuals to apply technical knowledge and skills to repair, service, maintain and diagnose problems on a variety of small internal-combustion gasoline engines and related systems used on portable power equipment such as lawn and garden equipment, chain saws, outboard motors, rotor tillers, snowmobiles, lawn mowers, motorcycles, personal watercraft and pumps and generators. This program includes instruction in the principles of the internal-combustion engine and all systems related to the powered unit. Instruction also includes the use of technical and service manuals, state inspection code, care and use of tools and test equipment, engine tune-up/maintenance, engine overhaul, troubleshooting and diagnostic techniques, drive lines and propulsion systems,

electrical and electronic systems, suspension and steering systems and service operations and parts management.

Academic Courses

American Studies - 1cr
American Studies is a Level I course that focuses on the history of the United States from 1900 to present. Through readings, literature excerpts, political cartoons, simulations, technology projects and more, students will gain insight into the nation's past by examing period accounts and first person voices. Students will use varied resources to examine the links and make connections between events being studied in the textbook/ learning guides and events that are taking place today. The major focus is the state history standards: content, chronology, analysis, and interpretation. Related concepts found in the state civics, economics, and geography standards are a supporting focus.

World Studies - 1cr
World Studies is a Level II course focusing on the diverse ways of life found around the world. Through study of the pertinent issues to the major regions of the world, students will recognize and evaluate the relationships between people, places, regions, and environments. Students will further explore how physical environments affect human events and build a global perspective that allows them to understand the connections between global and national issues. The major focus is the state's geography standards: maps, environments, places, and regions. Related concepts found in the state civics, economics, and history standards are a supporting focus.

Civics/Economics - 1cr
Civics/Economics is a Level III course that is comprised of two disciplines. Economics is a course that teaches students how to make reasoned economic choices and provide ways they can effectively participate in an increasingly competitive and interdependent global economy. Students will assess the impact of market influences and governmental actions on our economy through the use of real world economic applications and analyze how different economic systems interact. In Civics, students will learn about the basic freedoms traditionally enjoyed by American citizens and about the qualities of a good citizen. Students will explore issues about U.S. citizenship and their rights and responsibilities and roles in their communities by putting them in decision-making simulations and assessments that will enable them to acquire the skills necessary to participate in our democratic processes. The major focus of the course is state civics (government, politics, participation, citizenship) and economics (microeconomics, macroeconomics, economic systems, international trade) standards. Related concepts found in the state geography and history standards are a supporting focus.

School-to-Work Opportunity
Cooperative education is a structured program integrating classroom activities (emphasis placed on employability skills) with work experiences in a field related to a student’s

program of study. Cooperative education is a partnership among students, educational institutions and employers, with specified responsibilities for each party.

Who is eligible to participate: Students (third year, Level III) who have completed 75% of the program, which already have a job or a good prospect for a job defined by the student's career objective.

What are the requirements: Students must be recommended by their course instructor and have a completed résumé. Attendance, grades, attitude, and behavior are considered in the decision-making process.

- Work permit (if under 18 years of age)
- Approved student transportation
- Proof of auto insurance
- Senior Portfolio obligation

All school debts must be satisfied
Valid PA driver's license
Up-to-date task listing