



Lehigh Career & Technical Institute

“We have a career pathway for you!” **LEHIGH CAREER & TECHNICAL INSTITUTE** can teach you the skills and knowledge necessary to be successful in many career areas. It’s true, Lehigh Career & Technical Institute can prepare you for a career in health care, logistics technology, the construction trades, or 40 other programs of study, while offering college preparatory academics to ensure you are qualified to pursue a post-secondary education at the college or university of your choice.

Our career and technical programs are taught by instructors who have spent years training in their field of expertise to provide you with a state-of-the-art education. You can also earn college credit while you pursue your career through our dual enrollment program. You can take advantage of our Tech Prep and early college programs and still remain an active participant in your high school’s activities. Remember, LCTI is a great enhancement to the education you are receiving in your own school district.

Take a few moments and read about all the exciting choices and enrollment options available to you, at Lehigh Career & Technical Institute.

Enrollment Options

Academic Center: The Academic Center provides students in tenth through twelfth grades with the option of taking both their academic and career & technical course work at LCTI as full-day students. These rigorous academic courses will satisfy graduation requirements as well as complement the career & technical major of each student. Students will still graduate from their resident school districts, and are encouraged to participate in extra-curricular activities back at their sending school. Students will be able to register for the full-day program during their school district’s regular course registration time.

Half-day enrollment: Students in **grades nine through twelve** may choose the half-day enrollment option. This option provides students with career & technical education at LCTI and the required academics at their respective school districts. Students are encouraged to take high-level course work at the sending district which will provide the academic background necessary to be successful in today’s highly technical careers.

Flex time enrollment: Another option that may suit students’ individual needs is the flex-day program. The flex program is designed to provide students with technical coursework on a limited schedule. Students may choose to come to LCTI for one or more periods per day depending upon their needs. Students may attend one or both semesters and may attend for multiple years. Many students use this technical educational training as a jump start to a technical degree in a four-year institution. Both the half-day and flex-day options may be chosen during the regular course registration process.

Why enroll? Lehigh Career & Technical Institute clearly has the potential to offer students many career opportunities in a schedule that will serve individual needs. Students may decide to pursue career & technical education starting with their freshman year or may start as a sophomore, junior, and even a senior. With the rising cost of post-secondary education, students need to make critical career decisions that result in a post-secondary plan that has a likelihood of being successful. The more than forty career & technical offerings made available to students give them the skills and education that is necessary to make sound career decisions and become productive citizens in today’s global economy.

Equal Opportunity Statement:

Lehigh Career & Technical Institute has a policy not to discriminate on the basis of age, sex, handicap, national origin, color or race in its programs or employment as required by Title IX, Section 504 and Title VI, Age Discrimination Act, and Boy Scouts Act. Inquiries about this policy should be directed to Lehigh Career & Technical Institute’s Compliance Officer at (610) 799-1357. The information contained in this booklet is subject to change. Questions, please call Student Services at 610-799-1358.

ARTS AND HUMANITIES CLUSTER

Academic Center Course Offerings

All courses in the LCTI Academic Center are college-preparatory and will meet graduation requirements. Courses are assigned based on classes completed at the sending district prior to attending LCTI. A graduation project is required for all students attending the Academic Center. The courses offered in the Academic Center are listed below. Full descriptions of course offerings can be found at www.lcti.org.

English	Mathematics	Science	Social Studies	Other
English II	Geometry	Biology	Economics/Govt/ Civics	Wellness/ Fitness
Integrated American History & Literature	Algebra II	Chemistry	Integrated American History & Literature	PSSA Seminar
Integrated World History & Literature	Algebra II/ Trigonometry	Physics	Integrated World History & Literature	Literacy Advantage
LCCC English course	Calculus	Environmental Science		Math Apprenticeship
	LCCC Math course	Earth/Space		

Lehigh Career & Technical Institute Academic Center Course Schedule 2008-2009

Grades	Semester 1	Semester 2
10th	Math	Math
	Science	Science
	English II	English II
	Literacy Course	Math Apprenticeship
11th	Math	Math
	Science	Science continued
	Integrated American History & Literature	Integrated American History & Literature
	PSSA Math & Science Seminar	Wellness/Fitness
12th	Integrated British & World Literature	Integrated British & World Literature
	Government/Economics/Civics	Government/Economics/Civics
	Wellness/Fitness	Adv. CPR, First Aid
	Math or Science elective (single period) or	Math or science continued
	*Elective	

*Science, Math, Credit Make-up, Distance Learning, LCCC courses, World Language

Lehigh Career & Technical Institute Academic Offering for half-day students

Lehigh Career & Technical Institute (LCTI) provides academic courses to some half-day students who attend the school. It is very important for students to be successful in both their academic and technical course work. The courses taken at LCTI are necessary to meet the student's graduation requirements. If a student does not complete an academic course with a passing grade, the course must be re-taken. LCTI does not offer a summer school; however, this option may be available at the high school. It may also be possible for a student to make up the course in the senior year at LCTI; however, courses scheduled in the senior year can cause the student to lose the opportunity for a Cooperative Education job placement. If the coursework is not made up, graduation from high school may be jeopardized.

The following courses will be required while attending LCTI.

10th grade: American Studies II

Course Overview: This course surveys the American experience from the ending of the Western Frontier (1890) to the dawning of the 21st century. Focus will be given to the political, cultural and economic progress of America as it transforms into a world power.

11th grade: Wellness & Fitness

Course Overview: This course is designed to acquaint students with the benefits of physical activity in their lives and to promote life-long wellness and fitness. The course, held in the LCTI Fitness Center, will include a fitness component such as: cardiovascular endurance, strength and conditioning, weight training, flexibility, nutrition, body composition, and various technology-based exercises.

Advertising Design/Commercial Art: Drawing, design layout, desktop publishing, graphic design and illustration media are just a few of the areas covered in this program. The course prepares students for careers as commercial and graphic artists and illustrators in the fields of advertising, marketing, and public relations. Students are also taught sign making, digital photography, and computer graphics using Adobe Creative Suite 3. **(TECH PREP)**

Commercial Photography/Electronic Imaging: Students who select this specialty will receive training in photography both in the studio and on location using the latest digital camera techniques and digital computer technology for processing and printing images. The course includes professional lighting techniques and design elements for a wide variety of subjects including wedding and portraiture, products for advertising, as well as photojournalism and editorial markets.

Drafting/Computer Aided-Design: Students combine their industrial and mechanical interests with creativity and work toward successfully moving into mechanical, architectural or civil engineering careers. Drawing techniques, architectural plans, advanced AutoCAD, engineering and more open the world of CAD to students. This solid foundation assists Drafting/CAD students who wish to pursue further education and professional careers. **(TECH PREP)**

Painting and Decorating: Stenciling, wallpaper hanging, furniture refinishing and decorative finishes are a few of the emphases in this program. Students learn to paint and maintain interiors and exteriors of homes, businesses and historical buildings. Included in the variety of projects students undertake is the LCTI House Project, a student-built house painted by the students.

BUSINESS AND COMMUNICATION TECHNOLOGY CLUSTER

Administrative Office Technology/Accounting: Word processing, spreadsheets, databases, accounting and presentations expose students to a typical office environment. They learn computer applications in Microsoft Word, Excel, PowerPoint, Money and more. Students also learn to create forms and reports and how to publish them to the Internet.

Computer Maintenance Technology: Learn the operating systems and hardware inside a computer while training for the industry's A+ Service Technician Certification. Students learn to manage the Windows environment, demonstrate proficiency with and understand spreadsheets, databases, microcomputer service and support, peripherals, the Internet, and administer and troubleshoot a network. **(TECH PREP)**

Marketing and Business Education: Students learn about finance, retail marketing, banking, entrepreneurship, promotions and other important aspects of marketing through virtual business software and retail experience in the school's store. They examine what is necessary to run a business, promote a product or manage a department. Practical experience is available through the student-managed school store and by participating in community internship opportunities. **(TECH PREP)**

Material Handling/Logistics Technology: Students learn inventory control, purchasing, receiving, shipping, and equipment operation and maintenance in a state-of-the-art 17,000 square foot distribution center. Students train with current industry technology including; handle-held track pads and computers, vertical and horizontal carousels, a computer-controlled conveyor, and a computer-integrated warehouse management system. **(TECH PREP)**

Print Technology/Graphic Imaging: Press operation, digital imaging, electronic page layout, offset press operation and bindery introduce students to the printing industry. Students design and layout books, magazines, signs, tablets, greeting cards and newspapers using the most current versions of Adobe Creative Suite 3, QuarkXpress and Photoshop software and learn press operation on a state-of-the-art five-color sheetfed offset press in our Heidelberg Technology Center. **(TECH PREP)**

Web Design/Web Programming: Students learn the fundamentals related to web page design and website development, graphics, multi-media and HTML coding. Students are taught the tools for rapid web page production and basic server-side programming techniques to handle everything from forms transmittal to building dynamic interactive web pages, to intranets, extranet and e-commerce applications.

ENGINEERING AND INDUSTRIAL TECHNOLOGY CLUSTER

Auto Body/Collision Repair Technology: Students learn alignment, trim, hardware, body fillers, damage analysis, welding, heating, and more in this program. There are forty-three areas of study in this course and the volume of exposure students receive allows them to step into the workforce immediately or they may continue their study at the post-secondary level. **(TECH PREP)**

Auto Technology: Students in this program are prepared to diagnose and repair automobile systems including electrical systems, ignition and emission systems, engine cooling and lubrication, front ends, air conditioning, brakes, transmissions, engines and drive trains. Students participate in the nationally recognized Automotive Youth Education Systems (AYES) an industry partnership. The instructors of this program are Master Certified ASE Technicians who utilize state-of-the-art equipment to prepare students to become automotive technicians. **(TECH PREP)**

Cabinetmaking & Millwork: Cabinetry and wood products design and layout and construction open the world of cabinetmaking and millwork to students. Students are taught to read blueprints, make shop drawings and produce components with trade-related hand and power tools and machinery. The newly expanded lab and curriculum provides knowledge of lumber products adhesives, fastener, finishing, 32mm cabinets and counter top fabrication. Technology has entered this rewarding construction trade with the addition of CNC router technology.

Carpentry: Blueprints, site work, construction footings, framing floors/walls/ceilings/roofs, radon control, insulation and participation in the LCTI House Project teaches students in carpentry and six other labs to construct a house that is sold at auction upon completion. Students learn how the building industry works, what its standards are and what is required to complete a project on time and at cost. **(TECH PREP)**

Diesel/Medium and Heavy Truck Technology: Students gain experience with drive trains, clutch assemblies, transmissions, diagnostics, steering and other aspects of this industry. Students also study suspension, diesel engines, gasoline engines, bearing and seals. The trucking industry needs professionals to service the truck fleet that keeps industry and commerce moving in the United States. LCTI can provide students with the necessary expertise they need to succeed in this industry. **(TECH PREP)**

Electrical Technology: Students learn residential, commercial, industrial electrical wiring, as well as fluid power technology planning and wiring. Students are taught to install duplex and split wired duplex receptacles, single pole switches, 3-way and 4-way switches and Ground Fault Circuit Interrupters (GFCI).

Electromechanical/Mechatronics Technology: Students learn an innovative curriculum which combines hands-on training with real world industrial equipment and software. Students get a solid background in industrial, electrical and electronic systems, A.C. and D.C. motors, motor controls, power distribution systems, programmable controllers, hydraulics, pneumatics, mechanical drives, transformers, process control systems and troubleshooting. **(TECH PREP)**

Electronics Technology/Nanofabrication: Students are taught the principles of semiconductors and learn to design, build and test solid state devices. LCTI has a fully functioning Class 1000 fabrication room (clean room) where students create the silicon chips that are the foundation of the information age and the heart and soul of modern electronics. **(TECH PREP)**

Heating/Air Conditioning and Refrigeration: Students learn to install, troubleshoot and repair air conditioning, heat pumps, commercial refrigeration units and gas and oil heating equipment. Skilled technicians will become proficient in reading electrical diagrams, diagnosis of electrical problems, air distribution designs, copper and steel pipe cutting and soldering and fabricating fiberglass, and sheetmetal duct systems. Certifications include EPA Freon Handling and ICE. **(TECH PREP)**

Heavy Equipment Operations & Preventive Maintenance: As a student in this fast-paced and diverse program you will learn the safety, maintenance and operating techniques for a wide variety of earthmoving equipment. Students will also receive instruction in soils, erosion and sediment control, site preparation, aggregate production, concrete and asphalt paving, surveys and grades and utility installation. In addition, students will have the opportunity to learn machine systems, parts identification and ordering, and preventative maintenance techniques in a state-of-the-art facility. **This program is not available to ninth grade students.**

Landscape Construction/Environmental Design: Landscape technology, arbor culture, turf management, and

safety and equipment operation are all part of this program. Students learn plant identification, nursery production, pest management, safe tractor operation, front-end loaders, soil augers, and tree digging equipment.

Masonry: Students will learn various layouts and pattern designs using brick, concrete masonry units, stone, and ceramic tile. This comprehensive program teaches students how to correctly use the necessary tools and equipment to build simple wall structures, fireplaces and brick sculptures. Ceramic tile installation and thin stone veneer applications are also included in the curriculum. Students also participate in the student-built house project.

Plumbing and Heating: Students will learn to measure, cut, ream and thread steel, iron, copper, and plastic pipe and tubing. Students also learn rough plumbing and study plumbing and heating unit codes. The class will design and construction the plumbing system for the student-built house project.

Precision Machine Tool Technology: LCTI's precision machine lab is recognized as a Haas Technical Education Center and incorporates lessons and demonstrations, as well as extensive applications training in reading blueprints, operating a digital lathe, milling machine, drill press and other machine shop operations in the curriculum. Students train on state-of-the-art CNC machine tools placed in the lab by Haas Automation. **(TECH PREP)**

Pre-engineering and Engineering Technology: The Project Lead the Way engineering program is a sequence of courses, when combined with traditional mathematics and science courses introduces students to the world of engineering. Students study the principles of engineering, engineering design, digital electronics and computer integrated manufacturing. Students participating in the PLTW courses are better prepared for college engineering programs and are more likely to be successful. **(TECH PREP)**

Small Engines/Recreational Vehicle Repair : Students will learn to diagnose and repair lawn mowers, chain saws, jet skies, motorcycles, and go-karts. Students will learn about the small engine and the vital components to effectively make the engine perform to maximum efficiency. Students will also learn about brake systems, transmissions, hydraulics, hydrostatics, and drive systems. Students will learn skills that involve welding, cutting with a torch, cylinder honing, and boring.

Welding Technology: This course teaches students shielded metal arc welding, gas metal arc welding, flux cord arc welding, welding inspection, testing, and safety/emergency procedures. The program operates under entry level certification authorization by the American Welding Society and a special arrangement with Lehigh Carbon Community College permits students to earn a national skills certificate and an associate degree. **(TECH PREP)**

HEALTH AND HUMAN SERVICES CLUSTER

Commercial Baking: Cake decorating, breads, rolls, sweet goods, pastries, pies, doughnuts and nutrition are all part of this course. Students learn the fundamental principles and procedures of operating a fully functioning bakery and bake shop, including preparation, display and management. With attention to both theory and practice, this course is designed to prepare students for above entry-level positions in commercial baking.

Cosmetology: Students learn hair styling, hair cutting, haircoloring, chemical texturizing, nail and skin care, and salon business operations. Students learn these skills through clinical practices offered at the school salon. Preparation for the Pennsylvania State Board Examination will enable students to become licensed as a cosmetologist and will allow them to work in a challenging and creative profession. **(TECH PREP)**

Culinary Arts: Stocks, soups, sauces, appetizer, desserts, main dishes, menu planning, and nutrition are just some of the aspects of this program. Student learn front of the house and back of the house skills working in the school restaurant. LCTI's program is certified by the American Culinary Federation and is nationally recognized as exemplary in all areas of the curriculum. **(TECH PREP)**

Dental Technology: Students who enroll in this program learn a variety of skills that will enable them to become a dental assistant, dental laboratory technician, and/or pursue a career as a dental hygienist. The major areas of study in the course include: dental radiology, oral pathology, chair-side dental assisting, anatomy and physiology, dental materials, sterilization, and dental office business procedures.

Early Care & Education of Young Children: Students studying childcare will learn child and staff health, child development, early childhood education, special education, discipline and guidance of children, childcare program development, and professional development. **(TECH PREP) This program is not available to ninth grade students.**

Emerging Health Professionals: This is a dual enrollment course involving Penn State and LCTI. The program is based at Lehigh Valley Hospital/Health Network and Penn State Lehigh Valley. Students gain real world experience in health careers by shadowing hospital personnel in several departments. This competitive program requires an application evaluation and committee review. **This program is only available to senior students. (TECH PREP)**

Floral Design/Greenhouse Management: Processing cut flowers and greens, floral arrangements, silk and dry flowers, and the operation and maintenance of a state-of-the-art greenhouse are all part of this course. Students learn to stock, manage and market a retail floral shop. Students also learn plant identification, plant production, propagation, medium preparation, pest management, and environmental control.

Health Occupations/Health Related Technology: Students are taught about the patient's environment, nutrition, special treatments, care of the elderly, hospital procedures, and more. The world of medicine and science is growing and changing daily, creating an urgent need for well educated, skilled professionals. Students have the opportunity to train and test for their Health Assistant Certification. **(TECH PREP)**

Law Enforcement/Security Systems: Students learn Pennsylvania criminal and traffic laws, the legal use of force, search/seizure/evidence procedures, arrests and other aspects of law enforcement. Students also train in a fire arms simulator and conduct mock disaster drills to gain practical emergency skills. **(TECH PREP)**

Other Program Options

Service Occupations: Six curricular areas are offered in this program: Building Trades Maintenance, Custodial Maintenance, Grounds Maintenance and Landscaping, Food Service, Material Handling and Hospitality Services. Each area is designed to help the student transition from basic entry-level skill development to more advanced technical training or directly into the workforce. A skills assessment will be done to determine the readiness and interest of the student. Results of the assessment will be provided to the student's IEP team.

Career Academy Program: Provides the nine participating school districts of Lehigh County an alternative for at risk students to receive a high school diploma and work toward a career goal in their program of choice. Selected technical programs at LCTI are available to CAP students. They receive academic instruction in English, mathematics, social studies, science, health/wellness, physical education and enrichment coursework. A week of academic sessions rotate in the schedule with two weeks of technical education. Programs include: Auto Specialization Technology, Building Trades Maintenance, Carpentry, Early Care & Education of Young Children, Electrical Construction, Home Health Services and Office Systems Technology.

School-To-Career - What We Are All About!

- **Job Shadow** Students accompany employees through part of a typical day and learn about the varied aspects of their job and skills required to work in the field.
- **Internship** Students in grades ten and eleven participate in a business match program that allows them to spend a period of time working in their field of study.
- **Cooperative Education** Students in grade twelve participate in a business match program that allows them to spend a portion of their senior year working in their field of study. Students pursue their academic coursework during the A.M. session and report to their place of employment for the P.M. session.

Middle College/Dual Enrollment Program

Did you know you can take college classes while attending LCTI?

Discover if you should be going to college.

LCTI and Lehigh Carbon Community College have created a dual enrollment program called “Middle College.” It’s designed for students who may or may not be sure whether they want to go on to college once they’ve finished high school. The Middle College program will allow you to test drive the college experience while you’re in high school. In fact, in just three years, hundreds of students have earned over 400 credits through the program.

Here’s how the program works. Along with your LCTI technical high school classes, you can take college courses during your junior and senior years. You get to choose classes related to your career pathway. You’ll learn about some of the hottest job fields and whether you would want to pursue one of them. Plus you can earn an entire semester’s worth of credits toward an Associate’s or Bachelor’s degree and even more if you take summer courses.

You won’t have to break the bank to attend. Each course credit at LCCC Middle College costs about half the regular tuition rate, less than a fourth of the cost for a comparable course credit at any one of Pennsylvania’s State universities.

What is the COMPASS Test? The COMPASS Exam is a placement test for students who want to take college courses at LCCC. This exam score is used to determine the level of courses a student is academically prepared to take. The test is comprised of three sections: Reading, Writing, and Mathematics. If the students attain the minimum score, then they can take college courses at LCCC while attending LCTI. College credits earned at LCCC during high school qualify to fulfill both high school and college requirements.

Middle College requirements? Students must be Level II or higher in their lab programs and maintain a minimum of a “C” average to participate in the Middle College program. Students must also have good attendance and no discipline referrals. The course costs for the Middle College program must be paid by the student/parent.

What’s so special about LCCC Middle College?

The job market is incredibly competitive. Having more education will always help you. More education will help you advance in a career and make you more adaptable to changing job markets. In fact, attending LCCC Middle College is like getting a 25-lap head start at the Indy 500 or a 10-yard head start in a 100-yard dash.

With Middle College under your belt, you can accelerate your post-high school education, already having credit for some introductory courses at a traditional community or four year college.

Even if you decide not to pursue college once you graduate from high school, your Middle College experience still gives a boost to your earning potential.

College is your best chance of earning more money.

Attending college takes time and money, but statistics show its well worth the investment. According to the U.S. Census Bureau, workers with an Associate’s Degree will earn 31 percent more throughout their careers than high school graduates and workers with a Bachelor’s Degree will earn 62 percent more throughout their careers than high school graduates.

Still not sure if Middle College is right for you.

Find out whether you should go to college. Our one credit course called “**The College Experience**” helps you figure out if you should be pursuing a higher education.

In “**The College Experience**” you’ll learn what to expect if you go to college, as well as what will be expected of you. Why not give it a try? You have nothing to lose and everything to gain.