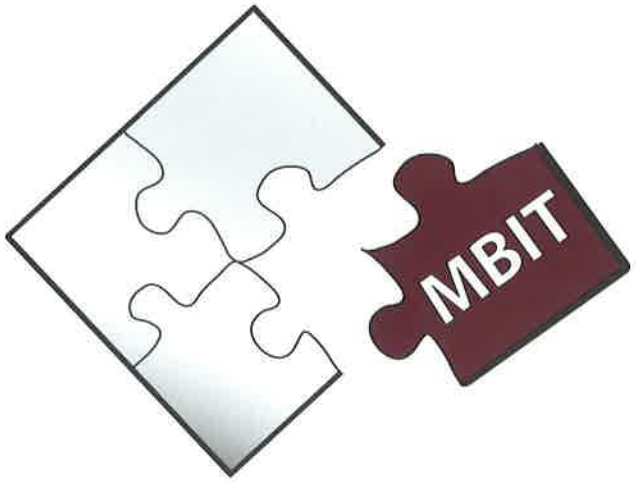
Middle Bucks Institute of Technology

Merging Business, Industry, and Technology



An important piece of your career and educational puzzle.

2013 - 2014 Program of Studies

www.mbit.org

MIDDLE BUCKS
Institute of Technology
Merging Business, Industry, and Technology
2740 Old York Road • Jamison, PA 18929

December 2012

Dear Parents/Guardians:

Allow me to introduce you to Middle Bucks Institute of Technology (MBIT). As a campus of your school district, your son or daughter has the unique opportunity to complete course work at our school **tuition free** while in high school. Students across America are recognizing the importance of developing a technical foundation along with academic skills before college or work. MBIT continues to be at the forefront of preparing students for greater success in college or in the increasingly competitive workforce.

So you may acquaint yourself with our educational programs, I am enclosing for your review a Middle Bucks Program of Studies for the 2013-2014 school year. Please take this opportunity to learn more about the twenty-two career & technical programs we offer, including our newest program, Administrative Sciences & Business Technology, as well as a modernized Computerized Drafting & Engineering Graphics program.

Students who are choosing to bundle their electives and enroll at MBIT are realizing such benefits as:

- ✓ Earning industry recognized certifications
- ✓ Earning college credits through numerous articulation agreements with area colleges & universities
- ✓ Confirming their desired career path
- ✓ Securing a solid "Plan B" to ensure multiple opportunities for work in a challenging economy

The best way to fully understand the educational opportunities at MBIT is to experience them firsthand; therefore, we will be hosting a school-wide **Open House** on **Thursday, January 3, 2013** from 7:00 – 9:00 PM. You will have the opportunity to tour the building, meet with teachers, and see students working in the labs.

In addition, there will be MBIT representatives at the Program Planning Nights in every high school in Centennial, Central Bucks, Council Rock, and New Hope/Solebury School Districts. If you are interested in applying to MBIT, an application form is enclosed. Simply complete the application and forward it to your sending school counselor. The application deadline is **April 1, 2013**. Please note that if your child is currently a student at MBIT, there is no need to complete a new application. A form will be sent home with your student in February/March for you to confirm enrollment at MBIT for the next school year.

Please take this opportunity to help secure your child's future.

Sincerely,

Kathryn Strouse

Kathryn Strouse
Administrative Director

Receive e-mail alerts about school cancellations, upcoming events, and more by visiting www.mbit.org and registering!

OUR MISSION

The mission of Middle Bucks Institute of Technology, as the regional career development and technology center, is to develop in youth and adults, through a rigorous and integrated educational experience, the competencies required for higher education and work.

MIDDLE BUCKS INSTITUTE OF TECHNOLOGY

2740 Old York Road, Jamison, PA 18929
Phone: 215-343-2480 Fax: 215-343-8626

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YOUR CAMPUS AT MIDDLE BUCKS

Middle Bucks Institute of Technology is located in Warwick Township on Old York Road in Jamison, Pennsylvania. The picturesque high school campus sits on 58 acres and is supported by Centennial, Central Bucks, Council Rock, and New Hope-Solebury school districts. Middle Bucks operates as a school of choice designed for students who are seeking to enhance their educational program with a highly relevant career and technical experience connected directly to the real world of business and industry. Over 400 business and industry advisors review and update the school's educational program annually. The Middle Bucks experience provides students with a blend of classroom theory, technical applications in state-of-the-art laboratories, and actual off-campus work-based experiences. Students learn and apply reading, writing, mathematics, science, communications, and technology in a way that has personal meaning and career relevance.

The educational program is organized around ten broad career clusters and operates twenty-two state approved career pathway programs. Approximately 800 students attend the daytime program. In addition to secondary students, the school clientele also includes approximately 500 adults who are enrolled in daytime, evening, and customized industry training programs. The school operates fall and spring sessions, with a summer enrichment program for middle school students. The staff consists of approximately thirty-four professional educators and thirty support personnel. Instruction is individualized, self-paced, and highly personalized.

Middle Bucks prepares today's students for tomorrow's emerging technologies and provides students with the competitive edge needed to compete in a global marketplace and succeed in college.

APPLICATION AND SELECTION PROCESS

Students must complete the Middle Bucks application process to be considered for admission. Selection is based on completion of selected Program Recommendations, aptitude and achievement scores, interest inventories, attendance records, behavior patterns, emotional stability, and staff recommendations. **A transcript is required to accompany the MBIT standard application**. Students are accepted based on the aforementioned variables and a quota system by district. Since many programs fill to capacity quickly, students should begin the application process early to ensure that a completed application package is on file at MBIT by April 1st of the year prior to enrollment. However, applications will be accepted anytime throughout the year. Middle Bucks applications may be obtained from your school counselor or by calling Middle Bucks Institute of Technology at 215-343-2480.

To apply or obtain more information about secondary programs and services, contact a member of the MBIT counseling staff at 215-343-2480, x249. For more information about adult programs, contact the Adult Education Coordinator at 215-343-2480 x108. You can also visit our website at www.mbit.org.

PROGRAM COSTS

Students are responsible for a non-refundable $25 MBIT activity fee, lab fees where applicable, tools, supplies, and clothing for their particular program. The costs associated with each program are listed under the "Program Requirements/Costs" section of each course description.

CAREER ASSESSMENT

Career assessment services are intended to help secondary students and adults make career decisions by identifying their technical aptitudes and interests, and is available at no charge to secondary students in each of the four sending districts. A testing center has been created at MBIT with staff trained in test administration and analysis. For more information, or to have your child tested, please contact either your child's guidance counselor, MBIT's school guidance counselor at 215-343-2480, x249, or MBIT's Organizational Advancement Coordinator at 215-343-2480, x115.

COLLEGE AND UNIVERSITY CONNECTIONS

MBIT has a variety of college and university connections available to students.

One college connection at MBIT includes **partnership agreements** that provide students with an opportunity to earn up to 18 credits toward an Associate's Degree by earning an industry-specific, nationally recognized skills certificate/credential that combines technical training with general education knowledge. These agreements also provide students with the opportunity to earn an additional 15 credits for two years of structured work experience at approved sites. **Five career pathways are eligible for this college partnership program at Bucks County Community College**: Automotive Collision Technology, Automotive Technology, Cosmetology, Electrical and Network Cabling Technology, and Welding Technology.

Career pathway **articulation agreements** are in place with many postsecondary institutions such as Bucks County Community College, Drexel University, Delaware Valley College, Pennsylvania College of Technology, and the Art Institute of Philadelphia. Students can earn from six to twelve credits toward an Associate's Degree or certification at these or other postsecondary institutions. See each career pathway description for specific college connections.

The mission of SOAR (Students Occupationally and Academically Ready) is to prepare students for college and careers in a diverse, high-performing workforce. SOAR is the career and technical Program of Study (POS) educational plan that articulates the secondary career and technical programs to postsecondary degree or diploma or certificate programs. SOAR programs lead students into a career pathway that align the secondary courses to a postsecondary program to complete a degree or certificate. SOAR programs prepare today's student for High Priority Occupations (HPO) which include career categories that are in high demand by employers, have higher skill needs, and are most likely to provide family sustaining wages.

The benefits of SOAR include saving money on college tuition; saving time by shortening college attendance; getting on the right career pathway; entering the job market ready; and getting a consistent, seamless education. Upon the successful completion of the required academics and technical competencies earned at MBIT, POS students may qualify for several free credits in their major at participating colleges across Pennsylvania. Students interested in the POS program are encouraged to ask whether their chosen program is POS approved. Program of Study pathways provide excellent opportunities for students pursuing a career and technical education at MBIT and beyond.

FLEXIBLE SCHEDULING OPTIONS

Middle Bucks attempts to accommodate the scheduling needs of all students through a flexible range of options. The school day at Middle Bucks is divided into two sessions: morning (7:45 a.m. to 10:30 a.m.) and afternoon (11:30 a.m. to 2:15 p.m.). Each session is divided into two 80-minute periods for a total of four periods a day. Morning and afternoon session assignments are made by Middle Bucks staff based on each student's educational or achievement level. Most students schedule their educational program at MBIT for two periods (2 hrs. 45 mins.) each day. Students may attend for a semester (18 wks.) or a year (36 wks.) and continue for two or three years. A fourth year may be scheduled with special permission. Priority will be given to 10th grade students enrolling half-day, two periods each day, for the entire school year. If a student's academic schedule does not accommodate any of these options, every attempt will be made to customize a schedule to fit an individual student's unique situation.

ACADEMIC COURSEWORK

All students are expected to schedule a rigorous sequence of academic courses to support their MBIT program and plan for a strong academic foundation. This foundation is necessary to prepare students for success in college and/or career advancement. The specific sequence of science, math, and social studies should be discussed with the school counselors at your participating school.

ADVANCEMENT AND PROMOTION

Instruction in all programs at MBIT begins with establishing a core technical foundation of knowledge and skills. The curriculum, which is sequential, enables students to build on the foundation of skills established in one level and progress to the next or advanced level. Consequently, students are expected to make continuous and satisfactory progress each year before advancing to the next progressive level.

Students mastering a significant level of competencies (i.e., 70%) for their assigned level and achieving a final grade of C or better shall be promoted to the next progressive level the following year. Students not able to achieve this benchmark standard shall be rescheduled into the same level the next year should they consider continuing in the same major field of study. Students who are unable to achieve a minimum standard of 25% task completion or receive a final grade of F will be required to consider other educational options.

Furthermore, students are expected to supplement their technical program with a rigorous sequence of academic courses at their high school. For most students, this constitutes a minimum three (3) years of academic math, four (4) years of academic English, and two (2) years of lab science. Failure to satisfactorily complete a rigorous academic sequence of courses will jeopardize a student's ability to continue in their major field of study at MBIT.

THE EDUCATIONAL PROGRAM

The educational program at Middle Bucks Institute of Technology is organized into ten career clusters and twenty-two career pathways (i.e., major courses of study). Typically, students enroll in one career pathway as their major field of study and then complete a core set of courses common to the career cluster and a highly rigorous technical sequence of courses related to their career pathway. Students may complete additional specialized courses as they advance beyond the standard secondary curriculum.

The career cluster model is recognized as one of the most effective educational initiatives for preparing students for the new economy.

Career Clusters and Pathways

Architecture & Construction Career Cluster

Pathways:

- Building Trades Occupations
- Computerized Drafting & Engineering Graphics
- Construction Carpentry
- Electrical & Network Cabling
- HVAC & Plumbing Technology
- Practical Environmental Landscaping

Arts, A/V Technology & Communications Career Cluster

Pathways:

- Commercial Art & Design
- Multimedia Technology

Health Science Career Cluster

Pathways:

- Dental Occupations
- Health Occupations
- Health Sciences

Hospitality & Tourism Career Cluster

Pathways:

- Culinary Arts

Human Services Career Cluster

Pathways:

- Cosmetology
- Early Childhood Care & Education

Information Technology Career Cluster

Pathways:

- Administrative Sciences & Business Technology
- Networking & Operating Systems Security
- Web Page, Digital Multimedia, & Information Resources Design

Law, Public Safety & Security Career Cluster

Pathway:

- Public Safety

Manufacturing Career Cluster

Pathway:

- Welding Technology

Science, Technology, Engineering & Mathematics Career Cluster

Pathways:

- Engineering Related Technology

Transportation, Distribution & Logistics Career Cluster

Pathways:

- Automotive Collision Technology
- Automotive Technology

ARCHITECTURE & CONSTRUCTION CAREER CLUSTER
BUILDING TRADES OCCUPATIONS

The Building Trades Occupations program prepares students for career paths and employment opportunities in the construction industry through technical knowledge and skills in the building, repair, and general maintenance of residential buildings and other structures. The program provides instruction in a number of the construction trades with a focus on all systems in a physical structure. The instruction includes structural carpentry, finish carpentry, millwork, plumbing, electricity, masonry, concrete, tile setting, installing hardware, heating, ventilation, waterproofing, roofing, siding, drywall, painting, regular tool and machine maintenance, environmental control systems, and record keeping. Students also learn to use hand and power tools, construction materials, estimating, blueprint reading, and construction safety. Clustered learning experiences are offered in collaboration with the Computerized Drafting & Engineering Graphics, Construction Carpentry, Electrical & Network Cabling, HVAC/Plumbing, and Practical Environmental Landscaping pathways as part of the Architecture & Construction career cluster. Graduates of this program are prepared for employment in the construction fields or may pursue more specialized training through an apprenticeship and/or post-secondary education.

Teacher: Michael Sykes

Certifications: Students will complete the OSHA CareerSafe Safety Certification, which provides students with 10 hours of OSHA recognized safety and health education training. Through the collaborative efforts of the **Residential Construction Academy (RCA)** and MBIT, the RCA Program introduces students to the building trades while guiding them in the development of essential workplace skills and attitudes. Students can complete the RCA Training Program that culminates in a national registry of students who have successfully completed the Program. The RCA works jointly with the National Association of Homebuilders (NAHB) and the Home Builders Institute (HBI) to create the national standards for the building trades. The national registry of students who have successfully completed the RCA Program provides the students the opportunity to access and verify skills and competencies achieved. The registry links construction employers and qualified potential employees to an on-line database to assist students in job searches and employment opportunities.

College Advanced Credits: This program has formal articulation agreements with Commonwealth Technical Institute that provides up to 6 advanced credits toward an Associate of Science degree.

Program Recommendations:

Read and interpret technical material
Mathematics fundamentals
Ability to work in various weather conditions
Physical stamina
Eye/hand coordination
Ability to work in teams
Ability to adhere to strict safety regulations

Program Requirements/Costs:

Appropriate uniform attire (approximately $75)
Tool belts and selected tools (approximately $150)
OSHA 10 hour Safety Certification (approximately $25)

Potential Careers Include:

Carpenter's Assistant
Construction Supervisor
Electrician's Assistant
Plumber's Assistant
Block Masons
Cement Mason
Concrete Finisher
Drywall and Ceiling Tile Installer
Drywall Finisher
Painter
Tile & Marble Setter
Roofing and Siding Installer
Maintenance and Repair Worker
Maintenance Supervisor

ARCHITECTURE & CONSTRUCTION CAREER CLUSTER
COMPUTERIZED DRAFTING & ENGINEERING GRAPHICS

Aspects of planning, preparing and interpreting mechanical, architectural, structural, civil GPS, electrical/electronic, topographic, piping, tool and die, and other drawings are included in this program. Instruction is provided in manual pencil drafting and computer-aided drafting CAD techniques using AutoCAD release 2012, Revit 2012, Sketchup version #8, and CREO 2.0 (formerly Pro-E). The use of reproduction materials, equipment and processes, development of detailed drawings and 3D solid modeling is provided. This program meets industry standards through curriculum, professional development and state-of-the-art equipment. Students complete an architectural house project, which includes working drawings, specifications, 3-dimensional perspective drawing and scale model.

Each student develops a professional portfolio. Our goal is to provide drafting students with the occupational and higher academic knowledge and skills required to perform successfully in high-wage, high-skill positions. Students will gain industry credentials and/or be eligible to sit for credentialing exams, which provide skills portability and career mobility by enhancing lateral and upward career moves. The curriculum has been approved as meeting current standards by the program's individual Occupational Advisory Committee which is made up of individuals considered as experts and current within the specific fields of drafting. The Computerized Drafting & Engineering Graphics program has ties with business and industry credentialing, local employers, and the Workforce Investment Board. It is through the Computerized Drafting & Engineering Graphics program that the "drafting technician" is a high priority occupation as sanctioned by the Bucks County Workforce Investment Board. The student's training experience is enhanced by the program's alignment with Pennsylvania College of Technology curriculum and ITT Institute with which we are articulated, and where students can pursue a post-secondary degree. This program is designed for students who plan to pursue an Associate or Bachelor degree in engineering or architecture.

Clustered learning experiences are offered in collaboration with the Building Trades Occupations, Construction Carpentry, HVAC/Plumbing, Electrical & Network Cabling, and Practical Environmental Landscaping pathways as part of the Architecture & Construction career cluster. Students are also provided shadowing and/or paid summer internship experiences.

Teacher: Craig Malinowski

Certifications: Students will complete the CareerSafe OSHA Safety Certification, which provides students with 10 hours of OSHA recognized safety and health education training. Students will also be trained in Green Advantage certification, which prepares students for green building and psychometrics to ensure environmentally-friendly building.

College Advanced Credits: This program has a formal articulation agreement with Pennsylvania College of Technology, a Penn State affiliate, which provides up to 6 advanced credits towards an Associate of Science degree, and with ITT Technical Institute, which awards up to three credits towards an Associate of Science degree.

Program Recommendations:
Read and interpret technical material **at grade level**
Basic computer skills

Program Requirements/Costs:
Uniform (approximately $12)
OSHA 10 hour Safety Certification (approximately $15)

Potential Careers Include:

Architect	Architectural Draftsperson	CAD Operator
Specialty Engineer	Estimator	Mechanical Draftsperson
Design Engineer	Specifications Writer	Specialty Draftsperson
	Design Technician	

ARCHITECTURE & CONSTRUCTION CAREER CLUSTER
CONSTRUCTION CARPENTRY

This program prepares students in all phases of building construction including layout of the site, footing and foundation construction, framing systems, exterior finishes, insulation, drywall, finish carpentry and cabinet installations, all with emphasis on residential home construction. Students also learn the proper use of hand and power tools, construction materials, estimating, blueprint reading, and construction safety. A full-scale student-built house is constructed each year as a project where advanced level students bring all their skills together as a culminating activity. Students will work in teams and under a variety of real occupational conditions. Clustered learning experiences are offered in collaboration with the Building Trades Occupations, Computerized Drafting & Engineering Graphics, Electrical & Network Cabling, HVAC/Plumbing, and Practical Environmental Landscaping pathways as part of the Architecture & Construction career cluster. Students completing this program will be prepared to begin entry-level employment in construction carpentry and related trade areas. Students will also have the technical skills to pursue an associate or baccalaureate degree in construction-related fields such as construction technology.

Teacher: Anthony Rogers

Certifications: Through course completion, students may earn the Pennsylvania Builders Association (PBA) Skills Certificate, which is offered to students graduating from Pennsylvania secondary career & technical programs in PBA endorsed schools. Students achieving a score of competent or higher on the NOCTI (National Occupational Competency Testing Institute) exam are eligible to receive a PBA Skills Certificate. Through the collaborative efforts of the **Residential Construction Academy (RCA)** and MBIT, the RCA Program introduces students to the building trades while guiding them in the development of essential Construction Carpentry workplace skills and attitudes. Students can complete the RCA Training Program that culminates in a national registry of students who have successfully completed the Program. The RCA works jointly with the National Association of Homebuilders (NAHB) and the Home Builders Institute (HBI) to create the national standards for the Construction Carpentry trade. The national registry of students who have successfully completed the RCA Program provides the students the opportunity to access and verify skills and competencies achieved. The registry links construction employers and qualified potential employees to an on-line database to assist students in job searches and employment opportunities. In addition, students will complete the CareerSafe OSHA Safety Certification, which provides students with 10 hours of OSHA recognized safety and health education training.

College Advanced Credits: This program has formal articulation agreements with Triangle Tech and Pennsylvania College of Technology, a Penn State affiliate that provides up to 12 advanced credits toward an Associate of Science degree.

Program Recommendations:

Read and interpret technical material
Mathematics fundamentals
Ability to work in various weather conditions
Physical stamina
Eye/hand coordination
Ability to work in teams
Ability to adhere to strict safety regulations

Program Requirements/Costs:

Appropriate uniform attire (approximately $50)
Tool belt and selected tools (approximately $50)
OSHA 10 hour Safety Certification (approximately $15)

Potential Careers Include:

Rough Framer	Master Carpenter	Project Manager
Finish Carpenter	Builder	Construction Estimator
Roofing and Siding Installer	Construction Superintendent	Building Inspector
Drywall Installer and Finisher	Construction Manager	Independent Contractor

ARCHITECTURE & CONSTRUCTION CAREER CLUSTER
ELECTRICAL & NETWORK CABLING

This program prepares individuals to apply technical knowledge and skills necessary to lay out, assemble, install, operate, maintain, test and repair electrically-energized residential, commercial and industrial systems, DC and AC motors, generators, transformers, controls, programmable logic controllers, and electrical distribution panels. Instruction emphasizes the application of mathematics and science, electron theory and Ohm's Law. The program includes instruction in single and three phase, delta and wye systems; both low (110 v. - 220 v.) and high voltages (440 v. and higher); reading and interpretation of commercial and residential construction wiring codes and specifications (i.e., National Electrical Code); installation and maintenance of wiring; service; and distribution networks within large construction complexes. Students will also receive instruction in solar and wind generation. They will build circuits powered by a 600 watt solar panel and a 400 watt windmill. They will also be able to trace the distribution of the power generated by these green technology components. Clustered learning experiences are offered in collaboration with the Building Trades Occupations, Construction Carpentry, Computerized Drafting & Engineering Graphics, HVAC/Plumbing, and Practical Environmental Landscaping pathways as part of the Architecture & Construction career cluster. Students will be prepared for entry-level employment in the electrical and cabling industry in residential, commercial and industrial settings. The program provides an excellent foundation of technical knowledge for college and/or direct employment.

Teacher: Randall McDowell

Certifications: Students will have the opportunity to obtain a 10 hour OSHA Safety Certification using the CareerSafe on-line tool, which provides students with 10 hours of OSHA recognized safety and health education training. In addition, students can earn C-Tech Introduction to Network Cabling Certifications in Copper Based Systems and Fiber Based Systems. Lastly, through course completion, students may earn the Pennsylvania Builders Association (PBA) Skills Certificate, which is offered to students graduating from Pennsylvania secondary career & technical programs in PBA endorsed schools. Students achieving a score of competent or higher on the NOCTI (National Occupational Competency Testing Institute) exam are eligible to receive a PBA Skills Certificate.

College Advanced Credits: This program has a formal partnership with Bucks County Community College. See page 2 for details. This program also has a formal articulation agreement with Pennsylvania College of Technology, a Penn State affiliate, and provides up to 12 advanced credits toward an Associate of Science degree.

Program Recommendations:
Read and interpret technical material **at grade level**
Mathematics fundamentals
Color perception
Physical stamina
Eye/hand coordination

Program Requirements/Costs:
Appropriate uniform attire (approximately $50)
Tool belt and selected tools (approximately $100)
OSHA 10 hour Safety Certification (approximately $20)

Potential Careers Include:

Journeyman Electrician	Electrical Control Technician	Cable Technician
Electrical Inspector	Ind. Maintenance Mechanic	Commercial Cabling Specialist
Electrical Draftsperson	Electro-Mechanical Technician	Network Cable Technician
Maintenance Electrician	Security Systems Technician	Underwriter
Residential Electrician		Marine/Aviation Electrician

ARCHITECTURE & CONSTRUCTION CAREER CLUSTER
HVAC & PLUMBING TECHNOLOGY

The HVAC (Heating, Ventilation, and Air Conditioning) and Plumbing Technology program has been designed around a business/industry and national skill standards model. This program uses project-based methods and national performance standards to instruct and evaluate students in a variety of careers in the mechanical and building maintenance industries. Students receive a highly technical instructional program that prepares them for an entry-level technician position using their academic and technical knowledge and skills to install, service and maintain heating, air conditioning, and plumbing systems. Instruction includes daily theory and hands-on application of basic principles of heating, ventilating, air conditioning, refrigeration and plumbing systems; Installation of rough-in plumbing system in frame construction and installation of rough-in plumbing system in ground; installation of residential plumbing fixtures, garbage disposals, kitchen and bath faucets, hot water heaters, gas fuel piping; installation of residential cooling systems; installation of residential heating systems; installation of refrigeration systems; blueprint reading; drain cleaning methods; HVAC trouble shooting methods and component replacement. Instruction also includes the use of ICC 2012 code books for plumbing, mechanical, and fuel/flue gas piping, basic hand tools, power tools and power equipment, refrigerant recovery equipment, manifold gauges, digital multi-meters and testing equipment.

Clustered learning experiences are offered in collaboration with the Building Trades Occupations, Construction Carpentry, Computerized Drafting & Engineering Graphics, Electrical & Network Cabling, and Practical Environmental Landscaping pathways as part of the Architecture & Construction career cluster. All first year students in this program will study plumbing. During the second year of the program, students will focus their studies by selecting either the HVAC pathway or the Plumbing pathway.

Students should expect a challenging learning environment both mentally and physically. Students with a high level of math and mechanical science skills will be well prepared for this technical curriculum.

Teacher: Jeffrey Muschlitz

Certifications: Through course completion, students may earn the Pennsylvania Builders Association (PBA) Skills Certificate, which is offered to students graduating from Pennsylvania secondary career & technical programs in PBA endorsed schools. Students achieving a score of competent or higher on the NOCTI (National Occupational Competency Testing Institute) exam are eligible to receive a PBA Skills Certificate. Students can also complete an EPA (Environmental Protection Agency) approved course in refrigerant recovery. With successful completion of this course and final examination, students will earn an EPA refrigerant recovery license, a nationally recognized credential. NATE (North American Technicians Excellence) Core and Specialty Exams are offered, as well as Gastite and Tracpipe Flexible Gas Piping Certification and the American Ladder Institute Safety Training Certification. Finally, students will complete the CareerSafe OSHA Safety Certification, which provides students with 10 hours of OSHA recognized construction safety and health education training.

College Advanced Credits: This program has a formal articulation agreement with Pennsylvania College of Technology, a Penn State affiliate, and provides advanced credits toward an Associate of Science degree.

Program Recommendations:

Read and interpret technical material **at grade level**
Algebra I
Color perception
Physical stamina
Eye/hand coordination

Program Requirements/Costs:

Appropriate uniform attire, shirt, jeans and boots (approximately $60)
Selected tools and reference materials (approximately $75)
Refrigerant Recovery License Exam Fees (approximately $25)
OSHA 10 hour Safety Certification (approximately $25)

Potential Careers Include:

Journey Plumber
Service Technician
Installation Technician
Maintenance Technician
Refrigeration Service Technician
Estimator
Specification Writer
Production/Mfg. Supervisor
Heating Plant Technician
Self Employed Contractor
Inspector
Project Manager
Sales Representative
Purchasing Agent

ARCHITECTURE & CONSTRUCTION CAREER CLUSTER
PRACTICAL ENVIRONMENTAL LANDSCAPING

The Practical Environmental Landscaping program emphasizes the knowledge, understanding, and application necessary to establish, maintain, and manage landscaping, hardscaping, and horticultural enterprises. Through hands-on activities, the program will prepare students in all phases of landscape/hardscape design and installation, horticulture, nursery operation, and turf management. With an emphasis on residential home installation, students will learn the proper use of hand and power tools, skid steering loaders, construction materials, measuring and estimating, blueprint/plan reading, and jobsite safety. Clustered learning experiences are offered in collaboration with the Building Trades Occupations, Construction Carpentry, Computerized Drafting & Engineering Graphics, Electrical & Network Cabling, and HVAC/Plumbing pathways as part of the Architecture & Construction career cluster. Students completing the Practical Environmental Landscaping will have the knowledge and skills necessary to begin a career in the landscaping, hardscaping, nursery and turf management fields. Graduates will also have the ability to pursue associate or baccalaureate degrees in horticulture related fields.

Teacher: Gregory Smith

Certifications: Students will have the opportunity to earn the Pennsylvania Pesticide Application Certifications, Pennsylvania Core Pesticide License Certification, and Safe Tractor and Machinery Operator Certifications. Students will also complete the CareerSafe OSHA Safety Certification, which provides students with 10 hours of OSHA recognized safety and health education training.

Program Recommendations:
Read and interpret technical material **at grade level**
Mathematics fundamentals
Effective communication skills
Physical stamina
Ability to work in various weather conditions

Program Requirements/Costs:
Appropriate uniform attire (approximately $50)
Selected tools and reference materials (approximately $50)
OSHA 10 hour Safety Certification (approximately $18)

Potential Careers Include:

Landscape Installer	Nursery Foreman	Landscape Designer
Hardscape Installer	Nursery/Field Supervisor	Construction Manager
Pond Installer	Nursery Sales	Project Manager
Irrigation System Installer	Maintenance Supervisor	Independent Contractor

ARTS, A/V TECHNOLOGY, & COMMUNICATIONS CAREER CLUSTER
COMMERCIAL ART & DESIGN

This program in the visual arts prepares the serious art student to use artistic techniques to visually communicate ideas and information to business and consumer audiences using graphics and illustrations for print, web, and video media.

The structure of the class simulates a professional graphic design studio. This course will develop an art student's skill and knowledge in the foundations of commercial art and allow them to explore in-depth a wide variety of art techniques and processes in both traditional and state of the art simulations including; hand drawing and illustration, color theory and application, digital imaging and digital file management, design layout and production, typography, digital photography, silk screen printing techniques, safety and the professional preparation of both traditional and electronic portfolios for the workforce or college.

Software applications include Adobe Creative Suite: Photoshop, Illustrator, InDesign, and Flash along with the iLife software. MBIT's Commercial Art students also earn **Adobe Certified Associates (ACA) in Visual Communication** by completing the Adobe visual design curriculum and certification exam.

Clustered learning experiences are offered in collaboration with the Web Design and Multimedia Technology pathway as part of the Arts, A/V Technology, & Communications career cluster. Upon graduation, most students continue their education at a college-level art school or are employed in entry-level positions in the business of art. The Commercial Art and Design curriculum at MBIT is aligned to the Pennsylvania Department of Education state standards for commercial/advertising art in technical education, allowing students advanced placement in some colleges.

Teacher: Bradley Rosenau

Certifications: Upon successful completion of the coursework and end user exam, students can earn the Adobe Certified Associate credential in Visual Communications**.**

College Advanced Credits: This program has a formal articulation agreement with Pennsylvania College of Technology, a Penn State affiliate; Bucks County Community College, which provides up to 9 advanced credits toward an Associate of Arts degree; and the Antonelli Institute, and the Art Institute of Philadelphia, which provide advanced credits based on a portfolio review.

Program Recommendations:
Creative/artistic ability
Read and interpret technical material
Mathematics fundamentals, including linear measurements
Knowledge of geometric concepts and spatial relationships
Basic computer skills
Color perception

Program Requirements/Costs: Art supply kit (approximately $50)

Potential Careers Include:

Commercial Artist/Illustrator	Digital Photographer	Sign Maker
Graphic Designer	Photo Restorer	Typographer
Desktop Publisher	Print Shop Assistant	Advertising Artist
Web Page Designer	Tattoo Artist	Silk Screen Artist
Animator	Industrial Designer	Airbrush Artist

ARTS, A/V TECHNOLOGY, & COMMUNICATIONS CAREER CLUSTER
MULTIMEDIA TECHNOLOGY

This program introduces students to the art and science of multimedia technology. Students learn several types of media productions while developing a full understanding of hardware, software, and equipment necessary for delivering effective presentations for business, education, and entertainment. Instruction includes training in concept design, graphic design, web design, video production, television production, audio production, electric computer imaging, motion graphics, animation and presentation technology using Apple computers. A variety of software applications are taught including Microsoft Office, Pages, Keynote, iBooks Author, Final Cut Pro, Soundtrack Pro, Motion, Color, DVD Studio Pro, iTunes, GarageBand, iPhoto, iWeb, iCal, Photoshop, Illustrator, Dreamweaver, and After Effects. Using state-of-the-art digital technology, students apply their knowledge and skills to create quality media productions for broadcast, DVD, Web, corporate video-based communications, and computer-based presentation technology. In addition, students receive instruction in Internet technology through the use of social networking and Web 2.0 applications. This course provides comprehensive hands-on experience with multimedia productions and Internet through instruction in conceptualization, project management, budgeting and distribution. Clustered learning experiences are offered in collaboration with the Commercial Art & Design pathway as part of the Arts, A/V Technology, & Communications career cluster.

This program will enhance students' computer literacy and increase their communication, artistic, and presentation skills in preparation for college and employment. The technical curriculum incorporates many of the academic standards in math, reading, and writing through the application of computation, reading comprehension, and writing skills. The program also teaches the fundamentals of leadership, ethics, accountability, adaptability, personal productivity, self-direction, and social responsibility. The course work is centered on the framework of 21st Century learning which includes their core subjects, creativity and innovation, critical thinking and problem solving, communication and collaboration, media literacy and life and career skills.

Teacher: Christopher Tully

Certifications: Upon successful completion of the coursework and end user exam, students can earn the Apple Certified Pro and Adobe Certified Associate credentials.

College Advanced Credits: This program has a formal articulation agreement with Bucks County Community College, which provides up to 9 advanced credits towards an Associate of Arts degree. This program also has a formal articulation agreement with Pennsylvania College of Technology, a Penn State affiliate, which provides credits upon review.

Program Recommendations:

Read and interpret technical material **at grade level**
Mathematics fundamentals
Basic computer skills
Effective communication skills
Manual dexterity
Physical stamina
Ability to work independently, as well as a member of a group
Strong depth and color perception
Creative/Artistic ability

Program Requirements/Costs:

Kit of selected computer supplies and educational materials (approximately $150)
Appropriate uniform attire (approximately $30)

Potential Careers Include:

Audio Technician/Editor	Photographer	Graphic Designer
Video Camera Operator	Photo Journalist	Lighting Director
Video Producer/Director	Director of Photography	Script Writer
Video Systems Engineer	Animator	Video Editor

HEALTH SCIENCE CAREER CLUSTER
DENTAL OCCUPATIONS

This program will prepare students to function as an integral member of a dental health team by developing the skills necessary for an entry-level position as a Dental Assistant, Orthodontic Assistant, Clinical Assistant, Dental Laboratory Technician or Dental Receptionist. The core curriculum will include instruction in dental radiology, oral pathology, chair-side dental assisting, anatomy and physiology, nutrition and OSHA regulations. Dental Science instruction will include content in dental materials, dental radiology, oral anatomy and pathology, and therapeutics. Clinical Science instruction will emphasize principles of office management, chair-side assisting, dental emergencies, and legal and ethical aspects of dental practice. Clinical education is also an integral part of the program, designed to perfect students' competence in performing dental assisting functions. Proficiency in job-related skills is obtained through lecture and practical hands-on experience in the lab or clinical setting. Clustered learning experiences are offered in collaboration with the Health Science career cluster and the Public Safety career pathway. The program is approved through the Pennsylvania Department of Education. Career Pathways include Certified Dental Assistant (CDA), Certified Expanded Function Dental Assistant (EFDA), Registered Dental Hygienist (RDH), and Doctor of Dental Sciences (DDS or DMD).

Teacher: Lisa Cuffari

Certifications: Upon successful completion of the course and subsequent exam, students have the ability to earn the Radiation Health and Safety (RHS) Certification, Infection Control (ICE) Certification through the Dental Assisting National Board, Inc. (DANB), and CPR Certification through the American Red Cross.

College Advanced Credits: This program has formal articulation agreements with Manor College, which provides 9 advanced credits, and Westmoreland County Community College, which provides 8 advanced credits towards an Associate of Applied Science degree.

Program Recommendations:

Oral expression and comprehension
Written expression
Near vision
Arm-Hand steadiness
Finger dexterity
Mathematic fundamentals
Read and interpret technical material
Laboratory Science

Program Requirements/Costs:

Physical Examination, including Hepatitis B and Mantoux (at student's expense)
Acts 34 & 14 – Compliance-Criminal Record Clearance (approximately $10)
Appropriate uniform attire (approximately $75)
DANB RHS Exam Fees (approximately $175)
Workbooks (approximately $125)
Activity fees (approximately $65)

Potential Careers Include:

Dental Assistant	Expanded Function Dental	Dental Hygienist
Front Desk Office Coordinator	Assistant (EFDA)	Dentist

HEALTH SCIENCE CAREER CLUSTER
HEALTH OCCUPATIONS

This program is designed to prepare students for entry-level careers in the health field. Students are provided both clinical and shadowing experiences in long-term care facilities and doctors' offices in the area, thereby enhancing the student's learning experience and assisting in the transition to employment in a variety of health care settings. The core curriculum includes Nurse Aide and Medical Assisting components with an overview of health careers, basic anatomy and physiology, medical terminology, clinical laboratory procedures, standard precautions, legal and ethical aspects of health care and communications skills. Clustered learning experiences are offered in collaboration with the Health Science career cluster and the Public Safety career pathway. In addition, students are provided instruction to qualify them for certification in First Aid and CPR. Leadership skills and opportunities are encouraged through active involvement in HOSA (Health Occupations Students of America).

Teacher: Gina Boccella, R.N.

Certifications: Upon completion of required hours and successful examinations, students can qualify for state certification as a Certified Nurse Assistant. Students can also earn their First Aid certification through the American Red Cross and CPR for Health Care Providers with AED certifications through the American Heart Association. In addition, students may also earn certification in Oxygen Administration.

College Advanced Credits: The Health Occupations program has a formal articulation agreement with Gwynedd Mercy College and provides variable advanced credits toward an Associate of Arts or Bachelor of Science degree. This program also has a formal articulation agreement with Pennsylvania College of Technology, a Penn State affiliate, which provides credits upon review.

Program Recommendations:

Read and interpret technical material
Physical stamina
Ability to lift 50 pounds
Laboratory Science
Mathematics fundamentals

Program Requirements/Costs:

Physical Examination, including Hepatitis B vaccination and two-step Mantoux test (at student's expense)
Acts 34 & 14 – Compliance-Criminal Record Clearance (approximately $10)
Appropriate uniform attire (approximately $60)
Industry Certification Testing Fee (approximately $100)
Workbooks (approximately $95)
Activity fees (approximately $60)

Potential Careers Include:

Nursing Assistant
Medical Assistant
Medical Office Secretary
Physical Therapy Aide
Medical Lab Aide
Home Health Aide
Personal Care Assistant

HEALTH SCIENCE CAREER CLUSTER
HEALTH SCIENCES

This program is designed for the college-bound student whose career plans involve the medical and allied health field. This program provides core instruction in the Health Care field, which includes: medical terminology and abbreviations, anatomy and physiology in health and disease, medical ethics and legalities, clinical laboratory procedures and skills, vital signs, current issues in health care, standard precautions, cultural awareness, nutrition, growth and development, and patient, environmental and personal safety. In addition, students are eligible for certification in American Heart Association CPR for healthcare providers with AED as well as certification in Oxygen Administration, Fire Safety and First Aid. The Health Sciences program participates in clinical experiences at area hospitals and health care facilities, including Abington Memorial Hospital, which affords students the opportunity to observe procedures, meet patients, and learn about technology and the educational credentials required for entry into various fields. Staff members from area hospitals provide seminars and guest lectures. Leadership skills are developed through HOSA (Health Occupations Students of America), our state and nationally recognized student organization. Clustered learning experiences are offered in collaboration with the Health Science Career Cluster and the Public Safety Career Pathway. Students considering this program should take a concentration of planned courses in mathematics and science. This course is **weighted** as an accelerated course for Council Rock students.

Teacher: Marsha Moyer, R.N., B.S.N., M.Ed.

College Advanced Credits: This program has a formal articulation agreement with Gwynedd Mercy College and provides variable advanced credits toward an Associate of Arts or Bachelor of Science degree. This program also has a formal articulation agreement with Pennsylvania College of Technology, a Penn State affiliate, which provides credits upon review, and Bucks County Community College, which awards three advanced credits.

Program Recommendations:
Read and interpret technical material **at grade level**
Advanced Math
Laboratory Science

Program Requirements/Costs:
Physical Examination, including Hepatitis B vaccination and two-step Mantoux test (at student's expense)
Act 34 – Compliance-Criminal Record Clearance (approximately $10)
Appropriate uniform for clinical rotation (approximately $80)
Workbooks (approximately $120)
Activity fees (approximately $60)

Potential Careers Include:

Registered Nurse
Licensed Practical Nurse
Emergency Medical Technician
Cardiopulmonary Technician
Respiratory Therapist
Physical Therapist
Occupational Therapist
Radiology Technologist
Ultrasonic Technologist
Medical Technologist
Physician Services
Hospital Administrator
Advanced Practical Nursing
Dialysis Technology Perfusionist
EKG Technician
EEG Technician
Surgical Technician
Anesthesiologist
Pharmacist
Physician's Assistant

HOSPITALITY & TOURISM CAREER CLUSTER
CULINARY ARTS

This ACF (American Culinary Federation) accredited secondary education program prepares students for employment in the hospitality industry, the largest industry in America today. Instruction includes theory and applications related to food preparation, menu and banquet planning, food and beverage purchasing, quality control, cost analysis, safety, and sanitation. Students learn the safe and proper use of hand and power tools related to the industry. Practical experience is a major part of the course through the operation and management of a complete restaurant and catered banquet affairs. Hands-on instruction includes food preparation techniques required in a variety of food service establishments. Components of the program include commercial baking and pastry, catering, food management, chef preparation, institutional foods, meat cutting, cooking methods, nutrition, safety, and sanitation. Upon completion of the program, students will be prepared for entry-level positions in the food service industry or advanced study at a culinary institute or college.

Teachers: Mark C. Gage and Michael McCombe

Certifications: Successful students will prepare to earn Serve-Safe Certification, recognized nationally by the American Culinary Federation and required by both the Bucks and Montgomery County Health Departments.

College Advanced Credits: This program has formal articulation agreements with the Culinary Institute of America, which provides 1.5 advanced credits toward an Associate degree in Culinary Arts; Pennsylvania College of Technology, a Penn State affiliate, which provides up to 6 advanced credits toward an Associate of Science degree; and Bucks County Community College, which provides up to 15 advanced credits toward an Associate of Arts degree.

Program Recommendations:
Read and interpret technical material
Mathematics fundamentals
Ability to work under time constraints
Fine motor skills
Physical stamina

Program Requirements/Costs:
Appropriate uniform attire (approximately $110)
Physical Examination including TB test (at student's expense)
Food Preparation Book and Workbook (approximately $65)

Potential Careers Include:

Executive Chef
Food and Beverage Director
Catering Manager/Owner
Dietician
Food Specialist
Banquet Chef
Health Inspector
Meat Cutter
Saucier
Baker
Product Salesperson
Chef Steward
Pastry Chef
Restaurant Owner/Manager
Maître-D
Banquet Manager
Federal Meat Inspector
Produce Manager/Buyer
Garde Manager
Chef Instructor/Education

HUMAN SERVICES CAREER CLUSTER
COSMETOLOGY

This program is designed in compliance with the rules, regulations and state-mandated curriculum of the Pennsylvania State Board of Cosmetology. Instruction is provided in a variety of beauty treatments including the care and beautification of the hair, skin, and nails. Also part of the curriculum are: training in shampooing, scalp treatments; hair styling, cutting, tinting and bleaching; chemical restructuring; permanent waving; facials; manicures and pedicures; nail technology; hand and foot massaging; bacteriology, chemistry, electricity, anatomy and physiology, hygiene, sanitation, salon management, and communication skills. Upon issuance of a professional license (by the PA State Board of Cosmetology), students are qualified for employment in a full service salon or advanced licensing in teaching. Other options include collegiate study in business or marketing, providing employment opportunities as manufacturers' representatives and/or small business owners. Clustered learning experiences are offered in collaboration with the Early Childhood Care & Education pathway as part of the Human Services career cluster.

Teachers: JoAnn McLaughlin and Maura Duncan

Certifications: Students who complete all of the requirements, including 1,250 hours of instruction, are eligible to receive selected PA cosmetology licenses upon successful examination.

College Advanced Credits: This program has a formal partnership with Bucks County Community College. See page 2 for details. This program also has a formal articulation agreement with Pennsylvania College of Technology, a Penn State affiliate, which provides credits upon review.

Program Recommendations:

Read and interpret technical material
Mathematics fundamentals including liquid measurements
Fine motor skills
Color perception and accurate vision
Good communication and interpersonal skills
Ability to adhere to strict safety regulations
Good organizational skills

Program Requirements/Costs:

Social Security # or Federal # (required to record hours)
Completion of 9th grade
Cosmetology Kit (approximately $600)
Industry Certification Testing Fees (approximately $149)
Must serve as both an operator and a peer model for all reversible services

Potential Careers Include:

Cosmetologist
Nail Technician-Manicurist
Esthetician Salon Manager
Salon Owner
Platform Artist
Make-up Artist
State Board Examiner
Competition Stylist
Chemical Technician
Instructor
Field Technician
Wig Dresser Body
Mortuary Beautician
Colorist

HUMAN SERVICES CAREER CLUSTER
EARLY CHILDHOOD CARE & EDUCATION

This program prepares students for a variety of careers working with children and provides both theory and practical experiences. Students assist in the operation of a laboratory childcare center located at Middle Bucks, Li'l Bucks Partners in Learning, which is licensed as a Pennsylvania-approved childcare center. Additionally, Li'l Bucks Partners in Learning is a Keystone Star 2 center. Those students, age 16 or older, are involved in supervising play, learning skills in behavior management, maintaining a safe and healthy environment, developing an understanding of policies and procedures regarding child care services, and developing learning activities for the toddlers and preschoolers. Classroom instruction includes topics on child growth and development, guidance and discipline techniques, nutrition, health and safety of young children, developing lesson plans, observation skills, and professional skills. The program is aligned to the CDA requirements as well as Pennsylvania's Program of Studies for Child Care. In the third year of the program, students complete clinical experiences working with infants, toddlers, preschoolers, school-aged children, or special needs children. Clustered learning experiences are offered in collaboration with the Cosmetology pathway as part of the Human Services career cluster.

Teacher: Lise Rich

Certifications: Students who successfully complete the three-year course may be certified as an Assistant Group Supervisor, which is a credential recognized by the Pennsylvania Department of Public Welfare, Bureau of Child Development Programs. Students are then eligible for employment in state-licensed child care centers in Pennsylvania. Students have the ability to complete the program eligible for the Child Development Associate (CDA) certification. The CDA is a nationally recognized credential in the childcare field.

College Advanced Credits: This program has a formal articulation agreement with Bucks County Community College, and provides 6 advanced credits toward an Associate of Arts degree. This program also has a formal articulation agreement with Pennsylvania College of Technology, a Penn State affiliate, which provides credits upon review.

Program Recommendations:
Read and interpret educational material
Mathematics fundamentals
Effective communication skills
Physical stamina
Emotional stability

Program Requirements/Costs:
Physical Examination including TB test (at student's expense)
Act 34 – Criminal record clearance (approximately $10)
Act 151 – Child abuse clearance (approximately $10)
Two written references
Age verification

Potential Careers Include:

Elementary Education Teacher
Special Education Teacher
Early Childhood Education Teacher
Children's Librarian
Preschool Director
Group Supervisor
Child Life Specialist
Group Home Counselor
Speech/Language Specialist
Licensed Day Care Provider
Nanny

INFORMATION TECHNOLOGY CAREER CLUSTER
ADMINISTRATIVE SCIENCES & BUSINESS TECHNOLOGY

The Administrative Sciences & Business Technology program is designed to prepare students to support the functions of daily business activities. Students will learn procedures and technology related to business management, entrepreneurship, marketing, and finance. By providing high-level administrative support in conducting research, preparing statistical reports, handling information requests, and performing clerical functions such as preparing correspondence, receiving visitors, arranging conference calls, and scheduling meetings, students will acquire skills necessary in any business or office environment. Students will learn to operate a variety of office equipment, such as fax machines, photocopiers, scanners, and videoconferencing and telephone systems. Software programs taught include Microsoft Word, Excel, PowerPoint, Access, and Publisher.

Students will learn the significant lessons and business functions involved in running a successful school-based enterprise, as well as the interpersonal skills required in any position. Students will study accounting, research, promotion, planning, managing, and selling; then learn to translate that knowledge into success in their own school store. Students also will learn basic accounting, including recording transactions in a general journal, financial statements, adjusting and closing entries, and preparing payroll records. Computerized accounting is introduced using QuickBooks Pro. An opportunity to develop a business plan and market a business is included. Instruction on teamwork, professionalism, public speaking, and presenting is also offered to give students the essential soft skills needed in today's workforce. Clustered learning experiences are offered in collaboration with the Web Page, Digital Multimedia & Information Resources Design and Networking & Operating Systems Security pathways as part of the Information Technology career cluster.

Teacher: Steven Guinan

Certifications: Students will prepare to take the Microsoft Office Specialist (MOS) certifications in Word, Excel, Access, PowerPoint, and Outlook.

College Advanced Credits: This program has formal articulation agreements with Bucks County Community College that provides 3 advanced credits toward an Associate of Science degree; Harcum College that provides 12 advanced credits toward an Associate of Science degree; Montgomery County Community College that provides 9 advanced credits toward an Associate of Science degree; and Penn College of Technology, which provides advanced credits upon review.

Program Recommendations:

Read and interpret technical material
Mathematics fundamentals
Effective written and oral communication skills
Basic computer skills

Program Requirements/Costs:

Appropriate uniform attire (approximately $20)
Textbooks (approximately $150 to begin student's professional library)
Industry Certification Testing Fees (approximately $60/test)

Potential Careers Include:

Administrative Assistant	Data Entry Operator	Word Processing Operator
Computer Specialist	Data Entry Supervisor	Executive Clerk
Accounting Clerk	Customer Service	Word Processing Supervisor
Service Marketing	Entrepreneur	Business Manager

INFORMATION TECHNOLOGY CAREER CLUSTER
NETWORKING AND OPERATING SYSTEMS SECURITY

Middle Bucks Institute of Technology is an authorized Microsoft IT Academy. The three year student will study the following topics: *Introduction to Microsoft Office 2007*, where students study Word, PowerPoint, Excel, & Access at an introductory level through the use of real world problem solving applications; *CompTIA A+ Certification* validates the latest skills needed by today's computer support professionals. It is an international, vendor-neutral certification recognized by major hardware and software vendors, distributors, and resellers; *CompTIA Network+ Certification*, where students learn the technology and theory behind local area network (LAN) through design and implementation; *CompTIA Linux+,* where students learn the fundamentals of an open source code operating system and learn to incorporate those into a heterogeneous network; *Microsoft Windows 7*, where students learn the integral working processes of the client operating system, which prepares them for certification; *Microsoft Windows Server 2008*, where students will obtain the knowledge and skills necessary to install, configure, administer, and support the primary services in the Microsoft Windows Server 2008 operating system; *CompTIA Security+ Certification,* which introduces students to industry-wide topics including communication security, infrastructure security, cryptography, access control, authentication, external attacks, and operations and organizational security; and *Introduction to Wide Area Networks (WAN),* where students learn about the ways large-scale networks are built, configured, and maintained. Clustered learning experiences are offered in collaboration with the Administrative Sciences & Business Technology and Web Page, Digital Multimedia, & Information Resources Design pathways as part of the Information Science career cluster. In addition, students will learn about Network Cabling Technology, where instruction includes blueprint reading; copper and fiber optic cabling systems; connectors; grounding, bonding, and electrical protection; pretermination and termination functions; safety and professionalism.

The newest component of the program is *computer forensics,* which is a branch of forensic science pertaining to legal evidence found in computers and digital storage media. There are many reasons to employ the techniques of computer forensics: in legal cases, computer forensic techniques are frequently used to analyze computer systems belonging to defendants (in criminal cases) or litigants (in civil cases); to recover data in the event of a hardware or software failure; to analyze a computer system after a break-in, for example, to determine how the attacker gained access and what the attacker did; to gather evidence against an employee that an organization wishes to terminate; to gain information about how computer systems work for the purpose of debugging, performance optimization, or reverse-engineering. The Certified Data Recovery Professional (CDRP) tests a student's fundamental knowledge of data recovery. Students must have the skills to successfully recover data from damaged or partially destroyed hard drives, sold state media and removable media. In addition to physical data recovery concepts tested, students must know how to perform logical recovery on common operating systems.

Teacher: Thomas Omerza

Certifications: Successful students in this program will have an opportunity to earn the following certifications: CompTIA's A+, Network+, Linux+, and Security+ Certification. Motivated students may work toward additional certifications, including Microsoft Certified Professional (MCP) Certification in Supporting the Windows XP Professional and Supporting the Windows 2000 Server or Windows 2003 Server, through independent study. MBIT is an authorized testing center and students can test on-site at a reduced fee.

College Advanced Credits: This program has a formal articulation agreement with Bucks County Community College, which provides up to 9 advanced credits, and Pennsylvania College of Technology, a Penn State affiliate, which provides credits upon review.

Program Recommendations:
Read and interpret technical material **at grade level**
Algebra I
Basic computer skills

Program Requirements/Costs:
Textbook (approximately $195 to begin student's professional library)
Industry Certification Testing Fees (approximately $130 per test)

Potential Careers Include:

Network Administrator	Network Consultant	Technology Coordinator
Technical Support Specialist	Communications Specialist	Computer Forensics Examiner
Network Specialist	Network Architect/Engineer	Data Security Specialist

INFORMATION TECHNOLOGY CAREER CLUSTER
WEB PAGE, DIGITAL MULTIMEDIA & INFORMATION RESOURCES DESIGN

The three-year student enrolled in this program will participate in an exciting program of study exploring computers in Internet-based technologies. Students will begin with the creation of static Web sites with Adobe Dreamweaver CS5.5 by utilizing templates, themes, spry widgets, interactive forms, tables, divisions, databases, and Flash objects. The student will then move on to the design and implementation of dynamic Web sites, augmenting their knowledge of Dreamweaver by creating Web page "content containers" with Microsoft Access 2010 and MySQL, and building and configuring applications servers using PHP. Students will also design and develop animations in Adobe Flash CS5.5, learn to enhance the digital images in their Websites with Adobe Photoshop CS5.5, and produce Web-ready video using Pinnacle Systems Studio Plus and TechSmith Camtasia. Along our way through this curriculum we will also take a look at object-oriented JAVA programming using Alice3. Students will examine and evaluate on-line sites, looking at design theory and implementation, how business is done on the Internet, and how copy is written for the Web. The advanced WEB student will work with a live client (a local business owner) to develop and implement a fully functional and published Web site, based on the needs of the client and his/her business initiatives. If the student has explored Web design and Web site creation in the past, this is an opportunity to move a skill set to the next level. For students interested in a career in communications, this program offers a study of techniques and technologies used with the largest communications medium on the planet! Clustered learning experiences are offered in collaboration with the Administrative Sciences & Business Technology and Networking & Operating Systems Security pathways as part of the Information Technology career cluster.

Teacher: Steven Guinan

Certifications: Students will prepare to take the Certified Internet Webmaster (CIW) Associate certification exam. Students can also prepare for the Adobe Certified Associate (ACA) certifications in Dreamweaver, Photoshop, and Flash. The Microsoft Office Specialist (MOS) certifications in Access and Excel are also available to the motivated student. MBIT is an authorized testing center and students can test on-site at a reduced fee.

College Advanced Credits: This program has formal articulation agreements with Delaware Valley College, which provides up to 9 credits toward an Associate or Bachelor of Science degree; Bucks County Community College, which provides up to 9 credits toward an Associate of Arts degree; and Pennsylvania College of Technology, a Penn State affiliate, which provides credits upon review.

Program Recommendations:
Read and interpret technical material **at grade level**
Algebra I
Basic computer skills

Program Requirements/Costs:
Textbooks (approximately $150 to begin student's professional library)
Industry Certification Testing Fees (approximately $60/test)

Potential Careers Include:

Web Site Designer	E-Marketing Specialist	Graphic Designer
Web Applications Developer	Information Systems Manager	Database Specialist
Systems Administrator	Animation Developer	Software Trainer
Web Developer	Communications Specialist	Information Technology Specialist

LAW, PUBLIC SAFETY & SECURITY CAREER CLUSTER
PUBLIC SAFETY

The Public Safety program is operated in partnership with the Bucks County Emergency Services Division. It is designed to prepare students for careers in four broad public safety areas - law enforcement, fire protection, emergency health services, and security and loss prevention. Students will study the following topics: criminal justice system, including juvenile justice and delinquency, corrections, and judiciary; police science including investigative, patrol, traffic and crowd control procedures and forensics; physical and mental fitness including self-discipline, defensive and arrest techniques; fire science including prevention, firefighting and rescue techniques, and hazardous materials; emergency medical services including EMT, dispatch, and first responder techniques; security and loss prevention as it applies to commercial, industrial and other corporate settings; vehicle and equipment use, maintenance and safety.

Through report writing, research, and information retrieval, students will apply and refine their communication and computer skills. The curriculum will include discussions and case studies on professionalism, ethics, cultural diversity, and conflict resolution. Classroom and laboratory experiences will be held at both MBIT and the Bucks County Public Safety Training Center. Supervised field trips, shadowing, and internship experiences at municipal police, fire and emergency services departments, crime laboratories, county jails, detention and rehabilitation centers, courthouses, and selected corporate sites will provide experiential learning opportunities. Clustered learning experiences are offered in collaboration with the Health Occupations and Health Sciences pathways as part of the Health Science career cluster. The learning experience will be further enriched with a host of guest lecturers and visiting instructors from a variety of agencies and colleges. This program provides an excellent foundation from which to pursue college and ultimately a career in public safety.

Teacher: John Fala

Certifications: Successful students will earn CPR, First Aid, & AED (Automated External Defibrillator) Certifications through the American Heart Association, OCAT (pepper spray) Certification, Expandable Baton Certification, MOAB (Management of Aggressive Behavior) Certification, PATH (Practical and Tactical Handcuffing) Certification and the Firefighter I and Emergency Medical Technician Certifications from the Commonwealth of Pennsylvania. These certifications will require passing performance and written examinations and meeting state standards for physical and mental fitness where applicable.

College Advanced Credits: This program has formal articulation agreements with Bucks County Community College, Pennsylvania College of Technology, a Penn State affiliate, ITT Technical Institute, and CHI Institute, which provide credits upon review.

Program Recommendations:
Read and interpret technical material **at grade level**
Algebra I
Basic computer skills
Physical and mental fitness
Effective written and verbal communication skills
Emotional stability

Program Requirements/Costs:
Appropriate uniform attire (approximately $170)
Act 34 – Criminal record clearance (approximately $10)
Physical exam (at student's expense)

Potential Careers Include:

Municipal/State Police Officer
Emergency Medical Technician
Paramedic
Emergency Management Tech.
Probation/Parole Officer
Fire Fighter or Control Technician
Safety Inspector or Supervisor
Code Enforcement Officer
Parks Ranger
Security Officer/Consultant
Corrections Officer
Military Police
Federal Agent
Investigator
Research Technician
Risk Management Consultant
Public Safety Administrator

MANUFACTURING CAREER CLUSTER
WELDING TECHNOLOGY

This instructional program prepares students in oxy/fuel welding, cutting, and brazing, shielded metal arc, gas metal arc, gas tungsten arc, flux core, carbon arc, plasma cutting using manual and CNC programming welding processes. Clustered learning experiences are offered in collaboration with the Engineering Related Technology pathway as part of the STEM (Science, Technology, Engineering and Mathematics) & Manufacturing career clusters. Students are trained in the types, sizes and uses of electrodes and welding rods, welding symbols, and the use of measuring instruments, hand tools, and portable grinders. Theory in metallurgy, electrical principles, blueprint reading, layout and design, and CNC programming on fabrication equipment is provided. Practical problems in math, preparation of material lists, cost estimating and methods of quality assurance are also covered. Quality control inspections include the use of destructive and non-destructive testing equipment, hardness testing, dye penetrant and magnaflux. The welding standards and procedures established by the American Welding Society (AWS), American Society of Mechanical Engineers (ASME), the American Bureau of Ships (ABS), the American Petroleum Institute (API), and safety practices outlined in the American National Standards Institute (ANSI Z49.1) codebook will be practiced. Students may pursue advanced studies at the postsecondary level in fields such as, welding engineering, metallurgy, structural design, energy technology, underwater welding, quality control and inspection, as well as apprenticeships.

Teacher: Paul Carney, Jr.

Certifications: Successful students will have the opportunity to earn entry-level and/or advanced level AWS certification upon examination. These nationally recognized credentials enhance employability in the fields of maintenance, manufacturing, metal fabrication, and other specialty areas. In addition, students will complete the CareerSafe OSHA Safety Certification, which provides students with 10 hours of OSHA recognized safety and health education training.

College Advanced Credits: This program has a formal partnership with Bucks County Community College. See page 2 for details. This program also has a formal articulation agreement with Pennsylvania College of Technology, a Penn State affiliate, and provides advanced credits upon review toward an Associate of Science degree.

Program Recommendations:

Read and interpret technical material
Mathematics fundamentals
Ability to adhere to strict safety regulations
Fine motor skills
Physical stamina

Program Requirements/Costs:

Appropriate uniform attire including steel-toed safety shoes (approximately $75)
Textbook and Lab Manual (approximately $60)
Industry Certification Testing Fees (approximately $125)
OSHA 10 hour Safety Certification (approximately $15)

Potential Careers Include:

Welding Technician	Maintenance Welder	CNC Plasma Operator
Welding Engineer	Ironworker	Underwater Welder
Welding Inspector	Boilermaker	Pipe Welder
Metal Fabricator	Metallurgist	Shipbuilder
Welding Supervisor	Sheet Metal Welder	Steamfitter

SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS CAREER CLUSTER
ENGINEERING RELATED TECHNOLOGY

This program provides the college-bound student with pre-professional experiences in the field of engineering and related technologies. Curriculum is enhanced through the use of state-of-the-art technology and **Amatrol Hands-On Learning Systems**. The ERT program is a rigorous sequence of courses that allows students to develop skills in engineering and engineering technology. Exposure to ***Principles of Engineering*** **and** ***Introduction to Engineering Design*** helps students prepare to enter a two or four-year college or technical school. The Amatrol System helps the student understand the practical side of engineering related technology by utilizing hands-on skills. This project-based curriculum challenges students to use mathematical, scientific, and technological principles to solve real-world problems. The broader ERT curriculum consists of a series of courses that expose students to the various disciplines of engineering, including Civil Engineering; Electrical and Electronic Engineering; Design Engineering; Industrial, Manufacturing and Mechanical Engineering; Chemical Engineering; Aerospace Engineering; and Computer and Network Engineering. Students will apply math and physics concepts to engineering problems. They will study electro-mechanical systems robotics, electrical and electronic theory, thermal heat, and fluid and pneumatic power. Students will learn to use a variety of engineering tools, including software applications for design, statistical and data analysis, project management, presentation, and reporting. In addition, students will use laboratory equipment for testing and measurement. Students will learn the problem-solving process, to think critically, and work in teams. They will also have the opportunity to participate in engineering competitions. Clustered learning experiences are offered in collaboration with other technology pathways as part of the **STEM** (Science, Technology, Engineering and Mathematics) initiative that is at the set point for 21st Century education. Students can gain practical work-based experiences through shadowing and paid summer internships and earn college credits.

Teacher: Allan Roberts

Certifications: Students will complete the OSHA CareerSafe Safety Certification, which provides students with 10 hours of OSHA recognized safety and health education training. Third year engineering students will be able to participate in SolidWorks Certification Program.

College Advanced Credits: This program has formal articulation agreements with Drexel University, which provides seven advanced credits towards its Applied Engineering Technology program, and Pennsylvania College of Technology, a Penn State affiliate, which provides credits upon review.

Program Recommendations:
Read and interpret technical material **at grade level**
Algebra I
Laboratory Science

Program Requirements/Costs:
Textbook (approximately $95)
Lab coat (approximately $40)
Lab supplies (approximately $75)
OSHA 10 hour Safety Certification (approximately $20)

Potential Careers Include:

Engineering Technician	Aerospace Engineer	Robotic Technology Specialist
Engineering Specialist	Manufacturing Technology Specialist	Drafting/CAD Specialist
Manufacturing Technician	Cost Analysis Specialist	Electro/Mechanical Technician
Manufacturing Engineer	Quality Control Specialist	Mechanical Engineer
Industrial Engineer	Robotic Technology Technician	Electrical Engineer

TRANSPORTATION, DISTRIBUTION & LOGISTICS CAREER CLUSTER
AUTOMOTIVE COLLISION TECHNOLOGY

This program is ASE/NATEF (Automotive Service Excellence/National Automotive Training Education Foundation) accredited across all five recognized curriculum areas including 1) structural analysis and damage repair, 2) non-structural analysis and damage repair, 3) mechanical and electrical components, 4) plastics and adhesives, and 5) painting and refinishing. Furthermore, this ASE approved program utilizes the industry standard I-CAR Live curriculum. Generally, students learn to reconstruct damaged automotive vehicles, light trucks, and structures. Students learn to examine damaged vehicles and estimate cost of repairs; remove, repair and replace body panels, accessories, electrical and hydraulic devices, grills, trim and automotive glass, and straighten unibody and conventional structures using state-of-the-art equipment and precision measuring systems. Refinishing processes and spray-painting techniques are taught in a controlled atmosphere downdraft spray booth according to industry standards. As part of the industry's efforts to be more environmentally friendly, an introduction to the use of water borne paints will also be covered. Clustered learning experiences are offered in collaboration with the Automotive Technology pathway as part of the Transportation career cluster. Students learn the proper use of power and hand tools, welding processes and techniques, and safety. Students will be prepared to enter the auto body and collision industry as entry-level technicians. Management, service and business ownership are career paths that many graduates successfully pursue.

AYES-Automotive Youth Educational Systems
The Automotive Collision Technology program participates in the AYES program that is operated in partnership with the major automotive manufacturers and local dealerships. See the AYES section under Automotive Technology for a complete description of this initiative or visit www.AYES.org.

The Automotive Collision Technology pathway has also been recognized by the Motor Vehicle Manufacturing Association Advisory Council and the Association for Career & Technical Education as one of the best automotive programs in the country.

Teacher: Arnold Jazlovietcki, Jr.

Certifications: Successful students may complete up to five ASE technician certification exams. Upon completing one year of related work experience, ASE will validate their industry credentials. The Pa. Safety Inspection Certification test, The Pa. Emission Inspection Certification test, and the EPA 609 Refrigerant Recovery/Recycling Certification test are all available.

College Advanced Credits: This program has a partnership agreement with Bucks County Community College. See page 2 for details. This program also has a formal articulation agreement with Pennsylvania College of Technology, a Penn State affiliate, which provides credits upon review.

Program Recommendations:
Read and interpret technical material
Mathematics fundamentals, including linear and liquid measurements
Color and size perception
Physical stamina
Eye/hand coordination
Organizational skills
Ability to adhere to strict safety regulations

Program Requirements/Costs:
Appropriate equipment/uniform attire (approximately $250)
Industry Certification Testing Fees (approximately $30 per test)

Potential Careers Include:

Collision Technician
Refinisher/Painter
Frame Straightener
Windshield/Glass Installer
Paint Representative
Parts Supplier
Insurance Adjuster
Collision Estimator
Upholsterer
Sheet Metal Technician
Body Shop Proprietor

TRANSPORTATION, DISTRIBUTION, & LOGISTICS CAREER CLUSTER
AUTOMOTIVE TECHNOLOGY

This nationally recognized and ASE/NATEF (Automotive Service Excellence/National Automotive Training Education Foundation) accredited instructional program prepares students to engage in the diagnosis, servicing, and maintenance of all types of automobiles. Instruction is provided in the diagnosis, repair and maintenance of engines, automatic transmissions/transaxles, manual drive trains and axles, suspension and steering systems, brake systems, electrical systems, heating and air conditioning systems, and engine performance. Clustered learning experiences are offered in collaboration with the Automotive Collision Technology pathway as part of the Transportation career cluster. Graduates of this program will be qualified to enter the automotive field as entry-level service technicians in new car dealerships or related automotive businesses. Students who pursue advanced technical training at the postsecondary level will find an array of career opportunities in service, management, and entrepreneurship.

AYES - Automotive Youth Educational Systems (www.AYES.org)
The Automotive Technology program operates in partnership with several automotive manufacturers, which has included Ford, General Motors, Daimler Chrysler, Toyota, and Volkswagen Corporations. All students will have the opportunity to participate in paid internships and apprenticeships in local automotive dealerships and receive a complete tool set scholarship. Those who successfully complete the AYES program are guaranteed employment with a local automotive dealer as an entry-level automotive service technician. These students will be encouraged to continue their education by pursuing Associate degrees in GM-operated ASEP programs, Daimler Chrysler-operated CAP programs, or Toyota operated T-10 programs, or other technical or related degrees. The goal of the program is to create a career path for students to enter and advance in the automotive industry.

The Automotive Technology program has been recognized by the Motor Vehicle Manufacturing Association Advisory Council and the Association for Career and Technical Education as one of the best automotive programs in the country.

Teachers: Paul Ciarlone and Robert Schwarz

Certifications: Students may complete up to eight ASE technician certification exams. Upon completing one year of related work experience, ASE will validate their industry credentials. In addition, students can receive special training to prepare them for the Pennsylvania state safety inspection, EPA 609 Refrigerant Recovery/Recycling certification, and the Pennsylvania ASM 50/15 – OBD II emission certification.

College Advanced Credits: This program has a partnership agreement with Bucks County Community College. See page 2 for details. This program also has formal articulation agreements with Pennsylvania College of Technology, a Penn State affiliate, which provides up to 10 advanced credits toward an Associate of Science degree; Northampton Community College, which provides up to 12 advanced credits toward an Associate of Science degree; and other private institutions.

Program Recommendations:
Read and interpret technical material
Algebra I as well as practical math applications
Eye/hand coordination
Color and size perception
Aptitude for scientific and mechanical theory

Program Requirements/Costs:
Appropriate uniform attire, including shoes, shirt, pants (approximately $100)
Industry Certification Testing Fees (approximately $30 per test)
Lab manuals and workbooks (approximately $200)
State Inspection and Emissions Inspection Class Fees (approximately $75)

Potential Careers Include:

Master (ASE) Service Technician
Tire, Wheel, and Suspension Specialist
Engine Performance Specialist
Insurance Adjuster
Air Conditioning and Heating Specialist
Transmission Specialist
Corporate Trainer
Front-end Alignment Technician
Manual Drive Train Technician
Brake Systems Specialist
Service Station Proprietor
Parts Manager
Regional Manager

RELATED PROGRAMS AND SERVICES

Student Support Services

The following additional services are available to students and/or prospective students:

- Academic Remediation
- Career Guidance and Counseling
- Career Assessment and Development
- Equity Services for Nontraditional Students
- Student Assessment/Aptitude Testing
- Special Support and Placement
- Health Services

Instructional support services are provided based on each student's individual needs to ensure his/her success. These services include remedial assistance in math, reading, writing, technical skills, job seeking and keeping skills, communications and interpersonal skills, and testing.

Work Based Education

As part of their chosen educational program, students may extend their educational training to an actual work site. In cooperation with local business and industry, students may participate in apprenticeship, co-op, internship, externship, clinical and/or shadowing experiences. All company sites selected for work-based training are evaluated on their ability to offer a relevant, safe, and supervised experience. Formal training agreements and plans are required of each work site to create the structure necessary for a successful experience. Work based education reinforces and supplements the technical education received at Middle Bucks and is scheduled based on student need and readiness.

Occasionally, an opportunity may arise for registered student apprenticeships through the Federal Bureau of Apprenticeship and Training and the Pennsylvania Apprenticeship and Training Council in several of our trade areas. These registered programs are sponsored jointly by employers and labor organizations. Middle Bucks Institute of Technology, through our cooperative education department, is helping to establish registered apprenticeships and provide these sponsors with qualified students. These apprenticeship experiences provide our students with a head start toward their journeyman certification.

Career & Technical Student Organizations

Career & Technical Student Organizations (CTSOs) are an integral part of the educational program at Middle Bucks. These co-curricular experiences provide students with opportunities to develop leadership skills and to participate in community service activities. Students are also able to compete locally, regionally, statewide, and nationally in skill and leadership competitions in their career specialty. All students are expected to participate in one of the following organizations – SkillsUSA, Health Occupation Students of America (HOSA), Future Farmers of America (FFA), or the Pennsylvania Builders Association (PBA). There is a $25 activity fee assessed to all students attending MBIT, which is applied to their state and national dues.

Portfolios

Portfolio development is an instructional strategy used to showcase students' work in all of the career and technical programs at MBIT. **All students** will develop a portfolio that represents a collection of work that can be presented to a prospective employer or college/university representative.

Industry Certification and Credentials

The high performance workplace demands a skilled, competent workforce. In order to provide a standard of performance, many industries have developed and offer examinations or certification programs leading to a nationally recognized credential. At MBIT, opportunities are available for students to complete recognized industry credential or certification programs. All twenty-two career pathways lead to the earning of at least one industry credential. The MOS (Microsoft Office Specialist), Automotive Service Excellence (ASE), Emergency Medical Technician (EMT), and the Pennsylvania Department of Health Nurse Aide (NA) certifications are just some of the credentials and certifications that students can achieve while enrolled at MBIT. Please refer to the "certifications" section under each career pathway for a complete listing. Many of these certifications/credentials offer the student an advanced position in a variety of higher paying jobs in our community.

High School Graduation Project

Students from Centennial School District who attend MBIT are encouraged to complete a senior project and/or their high school's graduation project requirement as part of the program. This opportunity is made available through the collaborative and coordinated efforts of MBIT and Centennial School District. Juniors from Centennial School District are required to complete their projects at MBIT. The purpose of this culminating project is to assure that students are able to analyze, synthesize, evaluate, apply and communicate information and knowledge. MBIT provides creative, relevant, and meaningful opportunities to complete this graduation requirement.

Job/Career Placement Services

Based on the student's career goal, Middle Bucks provides job placement services to meet individual needs and interests. Placement rates for Middle Bucks graduates have been excellent and have historically exceeded 90% for those students who desire and actively pursue job or college placement. Middle Bucks is committed to the placement of all successful students. In addition, placement services are available to all Middle Bucks alumni.

Adult and Industry Education

Adult students are accepted into all daytime programs as space permits. Opportunities exist for adult students to upgrade skills in their current position, refresh skills for employment or enter a new field. Students are offered individualized programs tailored to their needs. Flexible scheduling, childcare and placement assistance are available. In addition, customized industry employee training programs are available for companies and organizations. Finally, adults may enroll in one or more of the technical courses offered through the evening school program.

FACULTY & STAFF PROFILES

RICK BLACK
Assignment: Career & Technical Education Supervisor

M.S. in Education, Temple University; B.A., Geology and Education, Principia College; Vocational Instruction I & II certifications, Temple University; member, Omicron Tau Theta, Career & Technical Education Honor Society, Temple University chapter; eight years teaching experience; Certified ASE Parts Specialist and IAPA Parts Specialist; possesses Pennsylvania teaching certificate and Pennsylvania vocational supervisor certification.

GINA BOCCELLA
Teaching Assignment: Health Occupations

B.S. in Nursing, Temple University; Five years of nursing experience working at Abington Memorial Hospital; Certified Med/Surg Registered Nurse, Certified Reiki practitioner; graduate of Middle Bucks Institute of Technology; possesses Pennsylvania teaching certificate.

PAUL CARNEY
Teaching Assignment: Welding Technology

B.S. in Education, Temple University; occupational experience of thirty-five years; President, Pennsylvania Association of Welding Educators (PAWE); American Welding Society (AWS) Certified Welding Educator (CWE); American Petroleum Institute API 1104 Certified Welding Inspector (CWI); AWS Certified D1.1 structural and ASME IX code welder, holds U.S. defense nuclear certification for pipe and structural welding; Power Generation Service Technician on nuclear and fossil steam turbines; certified as a quality circle leader and laser technician by General Electric Aerospace Division; President of Carnac Industrial Training and Consulting; past member of International Society of Welding Educators (ISWE) and member since 1980 of the American Welding Society, Lehigh and Philadelphia Chapters; possesses Pennsylvania teaching certificate.

PAUL CIARLONE
Teaching Assignment: Automotive Technology

Twenty-eight years of occupational experience, including fifteen years as owner/operator of an automotive repair business and thirteen years experience as an instructor; Degree from Automotive Training Center in Specialized Automotive Service Technology with a Machine Shop Major; Degree from RETS Electronics in Electronic and Microprocessor Technology; ASE Certified Master Technician; ASE Certified L1 Advanced Engine Performance Specialist; Certified Instructor for Pennsylvania Safety Inspection License, Enhanced Emissions Inspector Certification, Fundamental Inspection Repair System Training; Certified with Mobile Air Condition Society to perform air conditioning refrigerant recovery; Emission Diagnostician Graduate Education Training Program; Daimler Chrysler factory trained in all skill areas; Ford factory trained in Electrical/Electronic, Multiplexing, Suspension, ABS and Climate Control; National Train the Trainer for OBDII; possesses Pennsylvania teaching certificate.

LISA CUFFARI
Teaching Assignment: Dental Occupations

Graduate of Manor College; Licensed Expanded Function Dental Assistant; twenty years dental office experience; four years teaching experience; member of the American Dental Assistants Association; c possesses Pennsylvania teaching certificate.

MAURA DUNCAN
Teaching Assignment: Cosmetology

Possesses State Board of Cosmetology Teacher certification; five years teaching experience and three years as an Instructional Assistant; member, Association of Vocational Teachers Educating in Cosmetology; Active licensed stylist; graduate of Middle Bucks Institute of Technology; possesses Pennsylvania teaching certificate.

ANGELA EGGE
Assignment: Special Needs Coordinator

M.Ed. in Education, East Stroudsburg University; B.S. in Biology, Old Dominion University; Certification in Secondary Education and Special Education; pursuing Special Education Supervisory Certification at East Stroudsburg University; fifteen years teaching experience; three years administrative experience; member, Bucks County Autism Support Coalition; member, Council for Exceptional Children; President of Sigma Phi Epsilon Delta, graduate honor society, East Stroudsburg University; possesses Pennsylvania, Maryland, and Virginia teaching certificates.

JOHN FALA
Teaching Assignment: Public Safety

M.S. in Public Administration, Pennsylvania State University; B.A. (magna cum laude) in Criminal Justice (magna cum laude), Temple University; fifteen years experience in the field of Criminal Justice; adjunct faculty member at Bucks County Community College, 2003 Pennsylvania Career and Technical Education Teacher of the Year; certification as a Senior Instructor-Advanced with Protective Safety Systems; NFPA Fire Fighter, Pennsylvania Department of Health State Certified Emergency Medical Technician Instructor, MOAB (Management of Aggressive Behavior) Instructor; PATH (Practical and Tactical Handcuffing) Instructor; Expandable Baton Instructor; OCAT (Oleoresin Capsicum Aerosol Training) Instructor, developed and conducted safety training for various government/ private agencies on the international, state and local levels; serves as Mentor Teacher; possesses Pennsylvania teaching certificates in Law Enforcement and Public Safety.

SANDRA FITZPATRICK
Assignment: Special Needs Coordinator

M.Ed. in Special Education (cum laude), Arcadia University; B.A. Psychology (summa cum laude), Gwynedd Mercy College; Certification in Special Education K-12; seventeen years experience in Career and Technical Education; possesses Pennsylvania teaching certificate.

STACEY FLOOD
Assignment: Special Needs Coordinator

M.Ed. in Education, LaSalle University; B.S. Psychology, East Stroudsburg University; Certification in Special Education N-12; Member of Pi Lambda Theta National Honors Society, LaSalle University, eight years experience in Career and Technical Education; possesses Pennsylvania teaching certificate.

MARK C. GAGE
Teaching Assignment: Culinary Arts

Graduate of the Culinary Institute of America, Hyde Park, New York; over twenty-five years occupational experience in the hospitality, food, and beverage industry, including positions as Executive Chef at country clubs, restaurants, hotels and catering establishments; Director of Food and Beverage for Club Corp of America International, Dallas, Texas; Instructor, Delaware Valley Culinary Institute; member of the American Culinary Federation (ACF); ACF Certified Executive Chef (CEC) and Certified Secondary Culinary Educator (CSCE); 2012 Recipient of the Liberty Museum *Teacher as Hero Award*; member of Delaware Valley Chefs Association and Phi Theta Kappa, National Honor Society; culinary arts salon winner; state certified food sanitation manager; graduate of Lower Bucks Technical School; possesses Hospitality, Supervision, and Nutrition Certification through the American Culinary Federation and Commercial Baking & Pastry Certification through Temple University; possesses Pennsylvania teaching certificate.

DR. THOMAS GREGOR
Assignment: Work-Based Education Teacher/Coordinator

Ph.D., Vocational, Technical & Adult Education, minors in Industrial Management & College Administration, University of Missouri; M.S. in Technical Education & Industrial/Consumer Psychology, Purdue University; B.S. in Education & Engineering, Purdue University, nine years secondary school teaching; two years experience working with the State Department of Education; nine years university teaching experience in engineering & vocational education, five years university administration experience; published numerous articles & textbooks in technical & professional areas; nineteen years business/industry experience in corporate training, employee relations & organizational development; held numerous leadership positions in educational & business associations; possesses Pennsylvania certificates as a teacher, Cooperative Education Coordinator, Supervisor & Director of Vocational Education.

STEVEN GUINAN
Teaching Assignment: Web Page, Digital Multimedia, & Information Resources Design; Administrative Sciences & Business Technology

M.Ed. in Business, Computer, & Technology Education, Temple University; B.S. in Graphic Design Communications, Philadelphia University; five years professional work experience in Business Management; five years professional work experience as a Graphic Designer; Microsoft Office & Adobe Certified; Member of the National Business Association of Education; possesses Pennsylvania teaching certificate.

ARNOLD JAZLOVIETCKI, JR.
Teaching Assignment: Automotive Collision Technology

B.S. in Education, Temple University; Broad range of experience in all aspects of automotive collision repair; ASE certified in the areas of Refinishing, Painting, Structural, and Non-Structural Damage & Analysis Repair; I-CAR certified in all eight areas of Auto Collision; possesses Master level certification as a PPG painter & painter's trainer; Chief Certificate for Full Frame Analysis & Repair Planning; Mitchell International Certificate in Advanced Computer–Assisted Estimating; Member of I-CAR's Collision Repair Instructor Network Association (CRIN); twenty-six years teaching experience in Automotive Collision Repair; graduate of Middle Bucks Institute of Technology; possesses Pennsylvania teaching certificate.

CRAIG MALINOWSKI
Teaching Assignment: Computerized Drafting & Engineering Graphics

B.S. in Architecture, Drexel University; A.S. in Architectural Drafting, Bucks County Community College; twenty years occupational experience in architecture and drafting technology; Member, American Design & Drafting Association (ADDA) and National Council of Architectural Registration Boards (NCARB); Green Advantage Certified (Building Green Initiative); graduate of Middle Bucks Institute of Technology; possesses Pennsylvania teaching certificate.

MICHAEL McCOMBE
Teaching Assignment: Culinary Arts

Graduate of the Culinary Institute of America, Hyde Park, New York; over thirty-four years occupational experience in the hospitality industry working in both management & chef positions at various prestigious resort hotels, restaurants, country clubs, catering establishments, & food service companies; member, American Culinary Federation (ACF) Philadelphia Chapter; ACF Certified Executive Chef (CEC) & Certified Culinary Educator (CCE); possesses ACF certification in Sanitation, Supervisory Hospitality Management, & Nutrition; Academic Mentor for the Culinary Institute of America; member, Delaware Valley Chefs Association; graduate of Middle Bucks Institute of Technology; National Technical Honor Society & SkillsUSA advisor; corps leader of the Bucks County Summer Youth Program; Instructor, National Restaurant Association; recipient of the Central Bucks Chamber of Commerce *Tree of Life* Outstanding Educator Award; selected as Pennsylvania's Outstanding New Vocational Teacher by the Pennsylvania Vocational Association; possesses Pennsylvania teaching certificate.

RANDALL McDOWELL
Teaching Assignment: Electrical & Network Cabling

Possesses PA Journeyman's Certification; twenty-five years of occupational experience in the field of residential and commercial electricity; certified in C-Tech copper based cabling systems and C-Tech Fiber Optic based Systems; Green Advantage Environmental Residential/Commercial certification; National Center for Construction Education and Research (NCCER) Certified Electrical Instructor; possesses OSHA 10 hour Construction Safety certification; seven years teaching experience; member of Electrical Association of Philadelphia; possesses Pennsylvania Vocational II teaching certificate.

JO ANN McLAUGHLIN
Teaching Assignment: Cosmetology

Teaching experience of over 25 years in private education; holds a cosmetology teaching license from the State Board of Cosmetology; member Cosmetology Educators of America; Salon Stylist; Matrix and Goldwell Certified Colorist; Pivot Point Certified; State Board Exam Rater; Paul Mitchell Trained; CliC Certified; Curriculum Development Manager and Regional Educational Director for private beauty school; member of the Association of Vocational Teachers Educating in Cosmetology; former Teacher of the Year; possesses Pennsylvania teaching certificate.

MARSHA MOYER
Teaching Assignment: Health Sciences

M.Ed. in Education, Temple University; B.S. in Nursing, Gwynedd-Mercy College; over twenty years of nursing and occupational experience; recognized as an Outstanding Vocational Teacher of the Year by the Pennsylvania College of Technology; recognized as Pennsylvania's Outstanding Vocational Teacher of the Year (1995) by the Pennsylvania Vocational Association; advisor of Health Occupations Students of America (HOSA); PennHOSA State Board Member; Past President of Omicron Tau Theta, graduate honor society, Temple University Gamma Chapter; served as a Mentor Teacher; possesses Pennsylvania teaching certificate.

JEFFREY MUSCHLITZ
Teaching Assignment: HVAC/Plumbing Technology

A.S. in HVAC/Plumbing Technology, Penn College of Technology; five years as Adjunct Professor in HVAC Technology at Northampton Community College; thirteen years as HVAC/R contracting business owner; Pennsylvania Registered Master Plumber; Pennsylvania Licensed Residential Electrician; Licensed Universal Refrigerant Technician; Master Oil Burner Certification; Copeland Compressor Certification; Plumbing Certificate from Penn College of Technology; R-410a Certification; Trac and Gas Tite Flex Gas Pipe Certification; Carrier Heat Pump Certification; Management of Aggressive Behavior (MOAB) certification; OSHA 10 hour CareerSafe certification; NCCER HVAC, Plumbing, and Core Instructor Certification; Keystone Technology Integrator; Pneumatic Controls, Chiller and Steam Systems experience; twenty-two years of occupational experience in the HVAC/Plumbing industry; possesses Pennsylvania teaching certificate.

THOMAS OMERZA
Teaching Assignment: Networking & Operating Systems Security

A.S. in Computer Sciences, Temple University; Microsoft Certified Systems Engineer (MCSE), MCP plus Internet, CompTIA A+ Certified Computer Repair Technician, Certified Computer Forensics Examiner (CCFE), Certified Data Recovery Professional (CDRP); nine years experience as computer network administrator at George Westinghouse Vocational Technical High School; three years as network product manager for the Chubb Institute, Parsippany, NJ; eighteen years teaching experience in computer & electronics, twenty-three years occupational experience in the computer industry; President and owner Moonlight Computer Consulting; holds F.C.C. radio license; served in the U.S. Navy; possesses Pennsylvania teaching certificate.

STACY PAKULA
Assignment: Organizational Advancement Coordinator

M.A. in Psychology, LaSalle University; B.S., Psychology, James Madison University; ten years as certified test supervisor through ACT; member of Psi Chi, National Honor Society in Psychology, the Pennsylvania School Counselors Association, and the Pennsylvania School Public Relations Association; graduate of the Central Bucks Chamber of Commerce Leadership Advancement Program; pursuing Pennsylvania secondary school counseling certification.

LISE RICH
Teaching Assignment: Early Childhood Care & Education

M.Ed. in Special Education, Arcadia University; B.S. (cum laude) in Early Childhood Care and Elementary Education, Temple University; Director, Li'l Bucks Partners in Learning Child Care Center; Member of NAEYC (National Association for the Education of Young Children) and PACCA (Pennsylvania Child Care Association); twenty years teaching experience with populations ranging from preschool to adults in a variety of settings, including public and private schools; experience in self-contained learning support and emotional support classrooms; possesses the PA Child Care Director's Credential and Pennsylvania teaching certificate.

ERIN-CAITLIN RINKER
Assignment: Guidance Counselor

M.Ed., in Counselor Education, Indiana University of Pennsylvania; B.A., Psychology with a minor in Educational Psychology; Indiana University of Pennsylvania; experience working as a Guidance Counselor with children and teens from kindergarten through 12th grade; 1.5 years experience working in the mental health field as part of the Student Assistance Program; 5 years of volunteer experience as a support group leader for a grief program known as a Safe Harbor; member of the Chi Sigma Iota Counseling Academic and Professional Honor Society International, Pennsylvania School Counselors Association, and the American School Counselors Association; possesses Pennsylvania Secondary School Counseling certification.

ALLAN ROBERTS
Teaching Assignment: Engineering Related Technology

M.S. in Industrial Engineering and Management, Redding University; B.S. in Industrial Engineering, New York Institute of Technology; over thirty years of engineering, operations and management experience; international experience in a variety of situations and projects with Processed Metals USA, American Meter Company, Abex Corporation, and Grumman Aerospace; positions held included vice president of international operations, director of manufacturing, plant manager, and I.E. manager; holds U.S. patents; has developed and instructed a multimedia motivational program throughout the United States; senior member in the Society of Manufacturing Engineers, Institute of Industrial Engineers and Robotics International; possesses Pennsylvania teaching certificate.

ANTHONY ROGERS
Teaching Assignment: Construction Carpentry

Twelve years of occupational experience including owner/operator of a residential construction and carpentry business; five years teaching experience; completed course work at Temple University, Moravian College, Delaware Valley College and Bucks County Community College; possesses Pennsylvania teaching certificate.

BRADLEY ROSENAU
Teaching Assignment: Commercial Art & Design

M.A. in Art Education with an emphasis on Special Populations (magna cum laude), Moore College of Art and Design; B.S. degree in Technical Education, Pennsylvania State University; Adobe Certified Associates Educator in Certiport Visual Communications using Photoshop; awarded the Pennsylvania State University College of Education Alumni Outstanding Professional Teacher Award in 2010; extensive studio and freelance work, including experiences with illustration and graphic design for University Graphics Services & USA Today newspapers; served as newsletter chairperson for Omicron Tau Theta, graduate honor society, Temple University; served as newsletter editor for the Pennsylvania State University Alumni Association, Montgomery County chapter; possesses Pennsylvania teaching certificate.

ROBERT SCHWARZ
Teaching Assignment: Automotive Technology

B.S. in Automotive Technology Management, Pennsylvania College of Technology; previous teaching experience as an automotive instructor at Community College of Philadelphia; over ten years occupational experience in dealerships and independently owned garages; ASE Certified Master Technician; ASE Certified L1 Advanced Engine Performance Specialist; ASE Certified Refrigerant Recovery and Recycling Technician; holds Pennsylvania Safety Inspector license, Pennsylvania Emissions license; Pennsylvania Emissions Repair Technician license; General Motors (GM) certified technician in all areas of an automobile; Saab Master-certified technician; possesses Pennsylvania teaching certificate.

GREGORY SMITH
Teaching Assignment: Practical Environmental Landscaping

B.S. in Business with a concentration in Marketing, Mount St. Mary's College; thirteen years industry experience, including eleven years as General Manager of company specializing in residential and commercial landscaping and hardscaping; certified interlocking concrete paver installer; member, Pennsylvania State University Agricultural Education Advisory Council; Instructor, Hardscaping, Pennsylvania State University Agricultural Extension Education; Advisor, Middle Bucks Chapter Pennsylvania State FFA; Chair, Pennsylvania State FFA Nursery Landscape Career Development Event; possesses Pennsylvania teaching certificate.

KATHRYN STROUSE

Assignment: Administrative Director

M.Ed. in Educational Administration, Gwynedd-Mercy College; B.S. in Education, West Chester University; fourteen years educational administration experience; twelve years elementary teaching experience; five years corporate training and employee relations experience; member of Pennsylvania Association of Career and Technical Administrators (PACTA), Pennsylvania Association of School Personnel Administrators, and Pennsylvania Association of School Administrators; possesses Pennsylvania elementary and secondary principal certification and director of career and technical education certification.

PAMELA SWOYER

Assignment: Work-Based Education Teacher/Coordinator

M.Ed. in Curriculum, Instruction, & Technology in Education, Temple University; B.S. in Retailing & Visual Communication, Syracuse University; five years broad-based executive, buying, human resources, managerial, training & recruiting experience in the retail industry; President, Bucks & Montgomery County Cooperative Education Association; member, Pennsylvania Cooperative Education Association, American & Pennsylvania Career & Technical Associations, Pennsylvania Business Education Association, National Association for Curriculum Development, Omicron Tau Theta Honor Society, & the Career & Technical Student Organization SkillsUSA District 2 Board; possesses Pennsylvania teaching certificates in Cooperative Education, Marketing Education, Business Education, & Special Education K-12.

MICHAEL SYKES

Teaching Assignment: Building Trades Occupations

Graduate of the Williamson Free School of Mechanical Trades; Business Administration coursework at Delaware Valley College; over twenty-nine years of occupational & supervisory experience in construction with an emphasis on home building, home remodeling, land acquisition, site improvement, entitlements, & customer service; Green Advantage Certified (Building Green Initiative), National Center for Construction Education & Research (NCCER) Core Curricula Instructor; HIPAA Certificate of Completion; Safety Committee Fundamentals Certificate in Hazard Identification, Safety Alerts & Beyond; Quality Management Certificate from Penn State University; achievement award for Essentials of Purchasing from Rutgers University; associate recipient of The National Homebuilder of the Year award from the National Association of Homebuilders; possesses Pennsylvania teaching certificate.

CHRISTOPHER TULLY

Teaching Assignment: Multimedia Technology

M.Ed. in Education, Temple University; B.S. in Radio Television & Film, Temple University; Apple Distinguished Educator (ADE); ADE National Board Member; ADE International Board Member; Lead Teacher Association in Career & Technical Education; twenty-three years broad-based occupational experience producing, directing, & editing live television, radio & television commercials, promotional & corporate videos, as well as developing computer-based training programs, designing & managing websites & social media; assessment developer for Cisco Systems Incorporated, Apple Computers Incorporated, National Occupational Competency Testing Institute, & the Pennsylvania Department of Education; Apple Certified Trainer; Apple Pro User; Cisco Certified Instructor; member, Association of Career and Technical Education, International Society for Technology in Education, Omicron Tau Theta Honor Society, Apple Certified Alliance, Apple Final Cut Pro Users Group, and the National Association of Photoshop Professionals; recipient of ACTE Exemplary Program, PA, 2007; Outstanding CTE Program, PA, 2008; Apple Exemplary Program, 2009-2010 and 2010-2011; Apple Distinguished Program 2011-2012 and 2012-2013; Central Bucks Chamber of Commerce *Tree of Life* Award, 2010; ACTE T&I Outstanding Teacher of the Year Award, 2010; Apple Exemplary Program, 2010-2011; and C. Thomas Olivo Outstanding Service Award, 2011; possesses Pennsylvania teaching certificate.

DR. THOMAS VIVIANO

Assignment: Assistant Administrative Director

Ph.D. in Workforce Education and Development, Pennsylvania State University; M.S. in Applied Technology, Chestnut Hill College; B.A. Career and Technical Education, Temple University; Supervisor of Career & Technical Education, Temple University; Director of Career & Technical Education Certification, Penn State University; National Board Certified Teacher in Technical Education; sixteen years experience as an Electrical Instructor; four years experience as an Assistant Principal; possesses Pennsylvania teaching certificate and Pennsylvania vocational supervisor certification.

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