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## **The Plumbing & Heating Program**

**CIP 46.0503**

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Have Questions?  
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# **READING MUHLENBERG CAREER & TECHNOLOGY CENTER**

## **MISSION STATEMENT**

The Reading Muhlenberg Career & Technology Center, in partnership with our diverse community, sponsoring districts, and business and industry, is committed to providing quality career and technical education, resulting in opportunities for students to gain employment, pursue post-secondary education, and develop an appreciation for lifelong learning.

## **VISION STATEMENT**

To empower Reading Muhlenberg Career & Technology Center students with the technical knowledge and skills to confidently pursue a career.

## **BELIEFS**

- We believe in valuing the diversity of each student
- We believe education leads to opportunity
- We believe quality education starts with quality leadership
- We believe a career and technical education is a critical component of workforce development
- We believe technology is vital to learning and will help students connect with a rapidly changing world
- We believe technology must be embraced by teachers as a tool to help prepare students to meet current and future labor market demands
- We believe in providing all students with a positive educational experience
- We believe students should feel proud of what they have accomplished each day
- We believe students will be provided the opportunity to achieve their highest potential
- We believe students will be provided the opportunity to acquire and cultivate leadership skills
- We believe in providing students with a safe school environment
- We believe the success of a student is enhanced by parents and/or other influential adults through their support and involvement
- We believe in encouraging students to maintain a lifelong affiliation with the school
- We believe change is an ongoing process, not an event, and is fundamental for building quality programs of study
- We believe instruction must accommodate individual student learning styles



## **Plumbing and Heating**

Your child is preparing to learn the skills and duties of a “Plumber” in the “Plumbing and Heating Program” at the Reading Muhlenberg Career and Technology Center. They have made an outstanding career & technical education choice but, as a parent of your future Plumber, it is important for you to understand some of the rules and requirements of the plumbing shop. Your understanding and support of the program can make the difference in the outcome of your child’s education.

It is imperative for your child to have the proper work clothes for this type of work environment. A work suit or jeans (no shorts) and a T-shirt with the school logo is required to be worn each day. This is a school uniform and is required to be worn each day. The student is supplied with one T-shirt and if more are needed they can be purchased through the school or a web site. Cotton materials are more durable in this field and also safer when the student is working with soldering torches. Synthetic man-made materials are definitely not suited for plumbing work due to their high flammability. In addition, a sturdy work shoe or boot is required and sneakers or sandals are not safe or permitted in the shop area. Safety glasses are required and one pair will be provided by the school. Your child will be held responsible to use and not lose this safety device. If lost, they will be required to pay for another pair. Without the proper work clothes the student will not be permitted to work in the shop and cannot succeed in the program.

Another important aspect of this education is the area of a student’s attendance. Missing class or being late is just as critical as missing a day’s work, and your child’s grade will suffer accordingly. A major portion of your child’s grade is assessed directly from attendance and performance in class. When absent, they will not receive a grade for the day unless we receive a parental excuse. Likewise if they are not working, fooling around, disrupting the class or not in their assigned area, valuable grade points for the day will be lost. His/her grade is his/her paycheck, based upon their performance.

In conclusion, your child’s education and their future are of my utmost concern. I will not hesitate to contact you by phone or through written correspondence when I feel you need to be informed of a problem. I believe in parental conferences if the need arises. I hope that you will also take an interest in your child’s future and contact me at school if you have any concerns or problems. We need to make it a joint effort to prepare your child for the world of employment as it exists today. Thank You.

Sincerely,  
Daniel Nemes  
Plumbing & Heating Teacher  
610-921-7300 ext. 7413  
dnemes@rmctc.org



# Plumbing & Heating

- Design and build residential and industrial plumbing systems.
- Install kitchen and bathroom fixtures using state of the art hand tools, power tools, and equipment.
- Repair and replace older plumbing fixtures and faucets with modern tools and equipment used by master plumbers.
- Obtain OSHA 10-Hour Safety Certification required by most plumbing contractors.

## Job Titles – Career Pathways

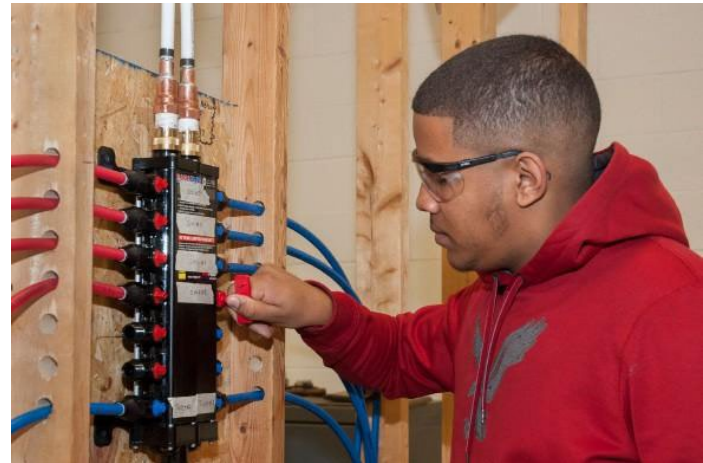
47-2152 Plumbers, Pipefitters, and Steamfitters

47-3015 Helpers — Pipelayers, Plumbers, Pipefitters, and Steamfitters

49-9042 Maintenance and Repair Workers, General

LOCAL Pipefitter

LOCAL Plumbing Salesperson



## CTC knowledge transfers to college credits at:

Community College of Allegheny County

Luzerne County Community College

Orleans Technical Institute

Pennsylvania College of Technology

Thaddeus Stevens College of Technology

Triangle Technology

## Student Certifications

NOCTI – National Occupational Competency

Testing Institute Certification

\* Plumbing Technology/Plumber

OSHA Safety Certification

PBA – Pennsylvania Builders Association

Corrugated Stainless Steel Tubing Installation  
Certification

## Accreditations

PBA – Pennsylvania Builders Association



## **Instructor – Mr. Daniel Nemes**

### **Biography**

I started my career in the Plumbing program at Somerset County Vocational Technical High School in Bridgewater, NJ. I was enrolled in that course for 4 years. The summer before my senior year I got my first full-time job in the plumbing field and have been in the industry ever since.

I have worked in all facets of the plumbing trade including residential and commercial, new construction, and service work. As a prior business owner, I am aware of the challenges and skills needed to progress from the apprenticeship position to the company owner. I have taught several previous apprentices who have progressed to become licensed business owners. I am passionate about the industry and excited to be able to get the next generation of professionals started in this field.



### **Education**

Plumbing Certificate, Somerset County Vocational Technical High School, Bridgewater, NJ  
High School Diploma, Somerset County Vocational Technical High School, Bridgewater, NJ  
Currently enrolled in Temple University

### **Certifications and Awards**

Gastite  
Uponor  
OSHA

### **Work Experience**

With over 20 years of experience in the plumbing field, I have worked on the repair and construction of everything from small homes to high rises. I have been an apprentice, plumbing technician, supervisor, project manager, and business owner.

### **Hire Date**

2020

## Program Planning Tool

Program Title: CIP 46.0503 PLUMBING AND HEATING

Student Name: \_\_\_\_\_

This document has been designed as a tool to facilitate student placement decisions and provides important information about the program. The chart on the reverse side is designed to assist in the identification of necessary skills, present educational levels, and supports, if any, that are needed to foster program success.

### ***Program Completion Requirements***

#### ***A successful student will...***

- Secondary Academic Course Requirements: The PA Dept. of Education's focus is to ensure every student is college and career ready, therefore all students are recommended to follow a college prep sequence of academic classes. Courses such as applied math or general science are not appropriate for this program. PDE's goal is to have all students perform at the competent or advanced level on the Keystone Exams and Program of Study end-of-program assessment (NOCTI).
- Complete an Occupational Competency Assessment (i.e. NOCTI end-of-program exam) and score at the "competent" or "advanced" level. This end-of-program exam will cover the full scope of the program of study curriculum and includes (1) a multiple choice test and (2) a performance test consisting of occupational related tasks scored and evaluated by industry judges.
- Earn a minimum of one industry recognized certification. Students will be encouraged and expected to earn all recognized industry certifications that make up the scope of the curriculum. Accommodations are not permitted for industry certifications. These include Pennsylvania Builders Association, OSHA, and Corrigated Stainless Steel Tubing Installation Certification.
- Complete the approved program curriculum and earn a minimum of one RMCTC Job Title aligned with the student's career objective. Job titles are identified on the program task list, aligned with local workforce needs and high priority employment occupations, and annually reviewed and approved by the program's occupational advisory committee.
- Successful completion of Keystone Exams as determined by sending school district.
- Maintain a 95% attendance rate or better.
- Transition on to a post-secondary institution, military or related fulltime employment aligned to their CTC program of study.

### ***Instructional Process/Specifications***

#### ***A successful student will...***

- Perform a wide variety of tasks in a laboratory environment with equipment consistent with industry standards. Up to 25 students are assigned to work "independently" and in "small teams". Students progress by using learning guides in a self-directed manner. In the laboratory, students will be required to use a variety of hand and power tools that will include hammers, files, wrenches, power saws, power drills, drill presses, soldering torches, pipe cutters, and pipe joining tools.
- Students will also be required to use ladders and scaffolding. Using this equipment requires self-discipline and strict adherence to rules to ensure safety of self and others. The laboratory simulates a real working environment therefore students will be exposed to the noise levels, dust, debris, and fumes associated with plumbing and heating professions.
- Participate in classroom theory and laboratory applications for generally 2 ½ hours each day; students will spend 50% of their time in classroom theory and 50% of their time doing laboratory applications and live work.
- Participate in Career & Technical Student Organizations including HBA, SkillsUSA and/or National Technical Honor Society.
- Participate in a paid or unpaid work based learning related to the Program of Study (cooperative education, clinical internship, and/or job shadowing).
- Complete written and performance tests. Students will be evaluated weekly on occupational skill performance using rubrics. In addition, students will be evaluated daily on work ethics. Progress is measured by test performance, task completion and work ethic.
- Read and study textbooks and technical manuals. Most textbooks are written at a 10th to 11th grade reading level and most technical manuals are written at a higher level.
- Complete homework on time. Homework typically involves chapter or workbook assignments, on line research assignments and writing assignments.
- Purchase appropriate work and safety attire, tools, and equipment. Following is an estimate of costs: UNIFORM: Cotton based work wear, \$30.00 & Work boots, \$85.00

## Program Planning Tool

CTE Requirements	Present Educational Ability/Level	Support Needs
<b>Program Completion</b> – Strong self-determination skills and understanding of personal strengths and weaknesses. Ability to meet industry established standards of performance, complete the program of study without curriculum modifications, and earn industry certifications without testing accommodations.		
<b>Reading &amp; Language Arts Level</b> - Text and manuals written on a 10-11 <sup>th</sup> grade reading level. Proficient on end-of-course exam (Keystone). Must have ability to read and understand technical reference manuals, blueprints, and schematics. NOCTI assessment and industry certification exams require a proficiency in English language skills.		
<b>Math Level</b> - At grade level and proficient on end-of-course exam (Keystone). Knowledge of arithmetic, algebra, geometry and their applications. Ability to calculate materials using floor plans, elevations and sectional plans. Ability to apply construction geometry; calculate board and square feet, linear measures, square measures, and cubic measures; convert fractions, decimals, and percents; simplify measurements. Ability to calculate electrical loads and perform electrical mathematics. Ability to do precise measuring and dimensioning according to blueprints and drawings. Ability to use math to solve problems.		
<b>Aptitude</b> – Mechanical, numerical ability, critical thinking, inductive reasoning, visualization and spatial relations. Problem solving and troubleshooting skills.		
<b>Safety &amp; Physical</b> – Manual dexterity, multi-limb coordination while standing, sitting or lying down, arm-hand steadiness and finger dexterity. General body coordination and stamina that requires considerable use of arms, legs and whole body. High degree of self-discipline and focus needed for safety around moving equipment, hand tools, power tools and other equipment found in the industry. Physical strength and stamina with the ability to lift 50 lbs. overhead. Ability to work in all weather conditions, work independently, have good eye/hand coordination, color discrimination, no fear of heights or working in closed spaces.		
<b>Interpersonal/ Social</b> – Active listening, communication skills with supervisors and peers, ability to work alone or cooperatively on a team.		
<b>Other Occupational/Program Considerations</b> - Exposure to the noise levels, dust, debris, and fumes associated with plumbing and heating. Ability to visualize in 3 dimensions, basic computer skills for online curriculum, strong attention to detail, willing to work in all weather conditions, willingness to work outside of classroom especially studying technical manuals.		

# Scope and Sequence Plumbing & Heating 46.0503

Academic Subjects – Career success and postsecondary education success require the same level of college prep coursework. The Pennsylvania Department of Education's (PDE) focus is to ensure that every student is prepared for college and a career. Academic courses such as applied math or general science cannot be listed on the program's scope and sequence. PDE's goal is to have all students perform at the competent or advanced level on the PSSA, and earn the Pennsylvania Skills Certificate on the end-of-program assessment.

	Secondary School				Postsecondary Institution			
Subject (Hours)	Grade 9 (Hours)	Grade 10 (Hours)	Grade 11 (Hours)	Grade 12 (Hours)	First Semester	Second Semester	Third Semester	Fourth Semester
Technical		Orientation	Print Reading & Calculations	Print Reading & Calculations	WEL 113: Oxy-Fuel Welding and Cutting I	CSC 110: Intro to Info Technology	QAL 247: Nondestructive Testing II	WEL 230: Shielded Metal Arc III
		Safety	DWV Systems	Fixtures/Faucets/Valves	WEL 114: Shielded Metal Arc I	QAL 237: Nondestructive Testing I	WEL 210: Flux-Cored and Sub Arc I	WEL 234: Shielded Metal Arc V
		Print Reading & Calculations	Pressure Systems	Water Heating	WEL 115: Oxyfuel Welding & Cutting II	WEL 120: Gas Metal Arc I	WEL 213: Gas Tungsten Arc III	WEL 247: Welding Design
		Pipe Joining	Fixtures/Faucets/Valves	Pumps	WEL 116: Shielded Metal Arc II	WEL 124: Gas Metal Arc II	WEL 214: Flux-Cored and Sub Arc II	WEL 233: Shielded Metal Arc IV/Pipe Welding
		DWV Systems	Water Heating	Employment Skills		WEL 123: Gas Tungsten Arc I	WEL 219: Gas Tungsten Arc IV	WEL 239: Shielded Metal Arc VI?Pipe Welding
		Pressure Systems	Miscellaneous	Management Skills		WEL 129: Gas Tungsten Arc II	WEL 240: Basic CNC Programming	WEL 248: Robotic Welding
		Job Seeking/Keeping Skills	Job Seeking/Keeping Skills	Plumbing codes & home systems				
				OSHA				
English	College Prep English 9	College Prep English 10	College Prep English 11	College Prep English 12	ENL 111: English Comp 1	ENL 201: Technical & Professional Communication		
Math	Algebra I	Geometry	Algebra II	Trigonometry	MTH 124: Technical Algebra & Trig I			
					MTH 180: College Algebra and Trig I			
Science	Accl Integrated Science	Biology	Chemistry	Physics				
Humanities	Citizenship	World Cultures	American History I	American Government				ECO 111: Principles of Macroeconomics
Other	Physical Education	Physical Education	Physical Education	Physical Education	EDT 107: Blueprint Reading	FIT: Elective: Fitness		
	Health	Health	Driver's Ed Theory					

**Competency Task List – Secondary Component**  
**Plumbing Technology/Plumber CIP 46.0503**  
**High School Graduation Years 2026, 2027, 2028**

**100 Safety**

Item	Task
	RESERVED (101-112)
113	Practice Occupational Safety and Health Administration (OSHA) safety standards as they relate to the industry.
114	Demonstrate proper donning, usage, and care of personal protective equipment.
115	Demonstrate proper safety procedures for hand and power tools.
116	Follow shop safety rules and procedures.

**200 Reserved**

**300 Blueprints and Sketching of Pipe Systems**

Item	Task
301	Interpret types of drawings.
302	Interpret various lines used on drawings.
303	Interpret specifications and dimensions.
	RESERVED (304)
305	Identify piping symbols according to the blueprints.

**400 Pipe Specifications and Systems**

Item	Task
401	Install pipe and connections according to manufacturer specifications.
402	Follow plumbing standards, codes, and specifications.
	RESERVED (403-404)
405	Research the effects and corrective measures for thermal expansion in a piping system.
406	Install various types of pipe insulation.
	RESERVED (407)

**500 Hand and Power Tools**

Item	Task
501	Use and maintain hand tools.
502	Use and maintain power tools and equipment.
503	Investigate the use of laser or transit level for sitework.

**600 Valves**

Item	Task
601	Use backflow prevention devices
602	Use types of valves that start and stop flow.
603	Use valves that regulate flow.
604	Use valves that relieve pressure.
	RESERVED (605)
606	Disassemble and assemble various types of valves, e.g., gate valve, globe valve, flushometer.

**700 Copper Piping Operations**

Item	Task
701	Join, cut, and bend various types of copper pipe tube, e.g., compression, flare, swage, press fit.
	RESERVED (702-704)
705	Prepare and join copper using brazing.
706	Prepare and join copper using soldering.

**800 Plastic Pipe and Tubing**

Item	Task
801	Measure, cut and assemble Polyvinyl Chloride (PVC) and Chlorinated Polyvinyl Chloride (CPVC).
802	Measure, cut and assemble cross-linked Polyethylene (PEX) plastic tubing and Polyethylene (PE).
	RESERVED (803-804)

**900 Pipe Hangers and Supports**

Item	Task
901	Use hangers to secure horizontal and vertical pipe to masonry, metal, and wood.
902	Layout and explain various fixture carriers.

**1000 Water Distribution Lines**

Item	Task
	RESERVED (1001)

1002	Rough-in water supply lines for residential and commercial fixtures according to manufacturer spec sheet.
	RESERVED (1003)

### 1100 Steel Pipe Operations

Item	Task
1101	Thread steel pipe with an adjustable die, power threading machine, and hand threader.
1102	Measure, cut, ream, and assemble various types of steel piping.
1103	Adapt steel pipe to other piping materials.
1104	Evaluate the process of joining black steel pipe with mega press fittings.
1105	Assemble Corrugated Stainless-Steel Tubing (CSST) pipe and fittings.

### 1200 Cast Iron Pipe Operations

Item	Task
1201	Use tools for working with cast iron pipe.
1202	Measure and cut cast iron soil pipe with various cutting methods.
1203	Assemble cast iron with No Hub, Fernco, and rubber gasketed joints.
1204	Research lead joints.

### 1300 Reserved

### 1400 Drains, Stacks and Sewers

Item	Task
1401	Lay out and establish grade/slope for drain lines.
1402	Explain backwater prevention.
	RESERVED (1403-1404)
1405	Rough-in drain lines for residential and commercial fixtures according to manufacturer specification sheet.

### 1500 Fixtures

Item	Task
1501	Install gravity, pressure assist, or flush valve type water closets.
1502	Install bathtubs.
1503	Install wall mounted fixtures.
	RESERVED (1504)
1505	Install kitchen sinks.
1506	Install prefabricated shower base drains.
1507	Install lavatories.
	RESERVED (1508)
1509	Install fixture traps.

### 1600 Appliances

Item	Task
1601	Install a dishwasher.
1602	Install electric and gas water heater.
	RESERVED (1603)
1604	Install a clothes washing machine box.
1605	Install specialty water heaters (oil, tankless, indirect, or heat pump).
1606	Describe the operation of a water re-circulating pump.
1607	Install a garbage disposal unit.
1608	Install a sump pump.
1609	Research a sewage ejector pump.

### 1700 Vents

Item	Task
1701	Apply principles and purposes of venting, e.g., common, individual, wet vent.
	RESERVED (1702)
1703	Explain vent termination.
1704	Explain air admittance valves.

### 1800 Plumbing Systems Maintenance

Item	Task
1801	Clear obstructions from lavatory drains.
1802	Clear obstructions from main drain lines.
1803	Clear obstructions from water closets.
1804	Repair/replace leaking water faucets or valves.
	RESERVED (1805-1807)

1808	Research methods to thaw frozen pipes.
	RESERVED (1809-1810)
1811	Replace all components in a gravity and/or pressure assist toilet tank.
1812	Research sewer camera(s) for pipe inspection.

### 1900 Tests on Systems

Item	Task
	RESERVED (1901-1903)
1904	Perform tests according to local plumbing and mechanical codes (air, hydrostatic, head pressure, etc.)

### 2000 Advanced Pipe Fabrication

Item	Task
2001	Calculate simple piping offsets.
2002	Calculate three-line, 45° equal-spread offsets around a vessel.
2003	Calculate three-line, 45° unequal-spread offsets.
2004	Convert center, back throat, and/or face measurement to an end measurement.

### 2100 Pressure Boilers

Item	Task
2101	Research various near boiler fittings, controls, and accessories.
2102	Research various types of boilers and fuel sources.
	RESERVED (2103-2105)
2106	Research the operation of water and steam boilers and their various controls.
	RESERVED (2107-2108)

### 2200 Hydronic Heating System

Item	Task
2201	Research piping for a hydronic heating system.
2202	Research a primary and secondary piping system.
2203	Research a radiant system.

### 2300 Ladders and Scaffolds

Item	Task
2301	Demonstrate the use of different types of ladders.
2302	Set up and inspect stepladders, extension ladders, and scaffolding.

## STUDENTS OCCUPATIONALLY & ACADEMICALLY READY



- *Earn college credits which will save you money on tuition*
  - *Shorten college attendance*
  - *Get on the right career path*
  - *Enter the job market prepared*
  - *Get a consistent education*
- *See your CTC School Counselor for More Information*

### TO QUALIFY CTC STUDENTS MUST:

1. Earn a high school diploma, achieve a minimum 2.5 GPA on a 4.0 scale in your CTC program and complete the PDE approved Program of Study.
2. Earn the industry certifications offered by your program (if applicable).
3. Achieve Competent or Advanced on the NOCTI End of Program Assessment.
4. Achieve proficiency on ALL of the Program of Study Competency Task List.
5. Provide documentation to Postsecondary Institution that you have met all of the requirements!

Find out more about the colleges offering course credits you can earn while attending RMCTC. Go to [collegetransfer.net](http://collegetransfer.net), search: PA Bureau of CTE SOAR Programs, and find your program by CIP Code.



*\*To receive college credits, qualifying students have three years from their date of graduation to apply and matriculate into the related career and technical program at a partnering institution.*

PLUMBING & HEATING

General Student Safety Contract

This is to certify that I, \_\_\_\_\_, have been instructed in, and understand, the following safety components of this technology education class.

**Safety Rules:**

**Date Instructed**

Use shop only when directed by the teacher.

\_\_\_\_\_

Never work with chemicals without checking labels carefully and only when directed by the teacher.

Place broken glass and disposables in appropriate designated containers.

\_\_\_\_\_

Report any accident, incident, or unsafe situation to the teacher.

\_\_\_\_\_

Confine long hair and confine loose clothing whenever working with equipment, flame, or chemicals.

\_\_\_\_\_

Wash hands before leaving the shop. Report all accidents to teacher immediately.

\_\_\_\_\_

**Location and proper use of the following safety equipment:**

Fire extinguisher

\_\_\_\_\_

Eye protective devices (goggles, face shields)

Eyewash

Deluge/drench shower

Chemical dispensing containers

Material Safety Data Sheets (MSDS)

Master shut-off for gas, electricity

Heat sources (Soldering equipment, etc.) First-aid kit

\_\_\_\_\_

Electrical equipment

\_\_\_\_\_

Emergency telephone procedures

\_\_\_\_\_

# PLUMBING & HEATING

## Safety procedures for the following situations:

Fire	_____
Chemical splash to the body	_____
Eye emergency	_____
Chemical spill	_____
Burns	_____
Open Wounds	_____

## Other concerns

Wearing vision corrective contact lenses (yes \_\_\_\_, no \_\_\_\_)

## Response to Student Violations of Rules

First Offense	Verbal warning from teacher; record kept of the infraction as incident report.
Second Offense	Review of rule involved; parent/guardian and student sign agreement that the rule is understood and will be followed.
Third Offense	Suspension from the shop area and assignment to the theory area pending successful conference with parent/guardian and the teacher.
Further Offenses	To be determined by the School Administration.

To the Parent/Guardian:

Your son/daughter will be working in a shop area where safety is of utmost importance. In order to ensure his/her personal safety, it is important that the above rules are followed. Failure to do so may result in the student's removal from the shop area and assignment to a theory area. I understand these rules and agree that my son/daughter will abide by these and all other written and verbal instructions given in class.

Date: \_\_\_\_\_ Teacher: \_\_\_\_\_

Date: \_\_\_\_\_ Parent(s)/Guardian: \_\_\_\_\_

Date: \_\_\_\_\_ Student: \_\_\_\_\_

## GRADE REPORTING

**Purpose:** The intent of this grading procedure is to provide a student grade that accurately reflects student achievement. Progress is measured in the areas of work ethics, knowledge and the practical skills aligned to the program area learning guides. Student performance for learning guide activities and assignments are reflected in the knowledge grade. Students will be evaluated according to established program standards on an individual basis. The student information system automatically calculates student grades using the following formula:

Work Ethic	40%
Knowledge	<u>60%</u>
	100%

Teachers must be able to justify grade percentages in the event of inquiries or concerns.

### Interpreting a Grade:

**Work Ethics Grade (40%):** Each school day, every student receives a Work Ethics or daily grade. Criteria that compromise these grades are safety, student behavior, preparation/participation, productivity or time on time on task, professional appearance and extra effort. The Work Ethics grade range is based on a 0 to 10 model that students may earn each day depending on how many criteria they criteria they satisfactorily meet.

**NOTE: Impact of Absenteeism, Tardiness/Early Dismissals** – The direct effect of absenteeism on a student's grade will be through the Work Ethic component of the grading formula. If a student is Tardy or has an Early Dismissal the Work Ethic can reflect a deduction in points earned for that class period. The instructor may change this value as they see fit.

**Knowledge Grade (60%):** Throughout the marking period, a student's cognitive knowledge about various career-specific topics will be evaluated and recorded by the instructor. Examples of knowledge activities include: lab/shop assignments, homework, quizzes, tests, and research activities. The knowledge grade range is based on actual points earned divided by the total accumulative points.

**Skill (Learning Guide):** A task list guides every RMCTC program. Tasks are evaluated on a scale with a 4 or 5 considered proficient. Learning guides are normally aligned to lab assignments or shop projects where a student will physically perform a task. The student and teacher will discuss, at the beginning of each quarter, student expectations and the required tasks that must be completed or "contracted" by the end of the marking period. This allows a student to work productively with the expectation to make constant progress during the marking period. All assignments, activities and rubrics associated with learning guides are documented in the "knowledge" grading component. It is important to note that poor productivity will have a negative impact on a student's grade.

**NOTE:** For the purpose of students earning a job title associated with their program area, teachers track students' skill/task work. Teachers identify specific criteria to evaluate each task performed, ranging from a 0 to 5 (not completed to mastery). Students must earn a 4 or 5, in order to credit the task towards earning the specific job title. Students have the opportunity to revisit a task multiple times until successfully receiving credit. The job titles a student earns will be listed on the student's RMCTC certificate that is awarded at Senior Recognition Night.

Student grades will be reflected as a percentage, and will be reported directly to the student's sending school to be added to the report cards.

Final Grade average is based on the student's four (4) numerical marking period grades.

If a student has three (3) marking period grades of "F" consideration will be given to that student not passing for the year. If a student is on an upward trend at the end of the school year, this may justify having the student pass for the year. If the opposite is true, and the student is on a downward trend, the student may be asked to select a new program or return to the sending school on a full-time basis.

The individual teacher must evaluate each student's achievements in terms of the expected goals for their program area.

Failure to complete assignments, frequent lateness or absence, and demonstrated indifference to school are major contributors to student failures. **Blatant refusal** to attempt or to complete a significant number of course requirements may lead to poor performance and possible removal.

The following divisions are given as a guide to recording and interpreting the grading system. It remains for each teacher to objectively and fairly rate each student, not based upon personality, but performance.

**Determination of Grades:** Teachers will give thorough consideration using all grading components in determining students' grades to both class work and test results.

**A = Excellent**

1. This grade represents superior work and is distinctly an honor grade.
2. The excellent student has reached all course objectives with high quality achievement.
3. The excellent student displays unusual effort and works willingly and effectively in reaching required objectives.

**B = Good**

1. This grade represents above average quality achievements.
2. The good student has reached a large majority of course objectives.
3. The good student is industrious and willing to follow directions.

**C = Average**

1. This grade represents satisfactory achievement.
2. The average student has reached a majority of course objectives.
3. The average student is cooperative and follows direction, yet extra effort and improvement are needed for more complete mastering of the material.

**D = Passing**

1. This grade represents a minimally satisfactory achievement.
2. The failing student has not reached necessary course objectives.
3. This achievement level indicates there is a great need for improvement, daily preparation and improved dedication and attendance.

**F = Failure**

1. This grade represents unsatisfactory achievement.
2. The failing student has not reached necessary course objectives.

**Incomplete Grades:** Incomplete grades must be updated no later than ten (10) days from the close of the marking period. As soon as the work is completed and the grade is available, it must be reported to the appropriate person.

**Failures:** Students who receive a failing final grade in a program area are permitted to repeat that program, but are urged not to do so. If this situation presents itself, students and parents are advised to consider an alternative program which is probably more suited to the student's true interests and aptitudes are not merely satisfying a short-term or unrealistic desire.

**Attendance and its Impact upon Grades:** The importance of regular school attendance and its positive impact upon students' performance grade cannot be overstated. If a student is absent, he or she does not have the opportunity to keep pace with their classmates and must work independently to acquire the information missed during any absence. Regardless of how well a student performs when he/she is present, habitual absenteeism usually results in a failing performance grade. This situation is not unlike the conditions of the business or industry for which the student is being trained.

**Makeup Work for Absences:** Students have the opportunity to make-up schoolwork due to an illness/being absent from school. Students must submit make-up work within the following timelines:

1. One (1) to three (3) days excused absence – five (5) school days to complete assigned work.
2. Four (4) or more days excused – ten (10) school days to complete assigned work. All work missed through unexcused absences will be graded zero (0).

**Report Cards (see Progress Reports):** Students will receive a report card from the sending school district which will reflect the student's grade from their Career & Technology classes. Students will also receive a report card from RMCTC reflecting their program grade and Social Studies grade, where applicable. In addition, grades are available on the parent portal.

**Student Recognition Night:** Reading Muhlenberg Career & Technology Center hosts an annual Student Recognition Night, which honors our senior students. During this event, senior students in attendance are recognized and may also receive awards that they have earned relevant to their accomplishments while attending Reading Muhlenberg CTC.

## **CAREER & TECHNICAL STUDENT ORGANIZATIONS (CTSO)**

All students enrolled in Reading Muhlenberg Career & Technology Center have the opportunity to participate in at least one Career & Technical Student Organization (CTSO) while enrolled at the CTC. Students who become members in these co-curricular organizations have the opportunity to participate in team building, leadership, community service and social events.

Students also have the opportunity to attend skill competitions where the skills they have learned are "put to the test" against other competitors. These competitions include testing of knowledge and hands-on skills in a variety of trade and leadership events. Students who are fortunate enough to win their events at a district or state competition are able to compete at the national level and travel to locations such as Louisville, KY, Kansas City, MO, San Diego, CA, Orlando, FL, and Cleveland, OH.

### **SkillsUSA**



<http://skillsusa.org>

SkillsUSA is a national organization of students, teachers and industry representatives who are working together to prepare students for careers in technical, skilled and service occupations. SkillsUSA provides quality education experiences for students in leadership, teamwork, citizenship and character development. It builds and reinforces self-confidence, work attitudes and communications skills. It emphasizes total quality at work, high ethical standards, superior work skills, life-long education, and pride in the dignity of work. SkillsUSA also promotes understanding of the free-enterprise system and involvement in community service.

### **Home Builders of America (HBA)**



<http://www.pabuilders.org/>

The purpose of the HBA Student Chapter Program is to give students first hand exposure to the "real world" of the building industry and an invaluable complement to their academic studies.

### **National Technical Honor Society (NTHS)**



[www.nths.org](http://www.nths.org)

NTHS is the acknowledged leader in the recognition of outstanding student achievement in career and technical education. Over 2000 schools and colleges throughout the U.S. and its territories are affiliated with the NTHS. Member schools agree that NTHS encourages higher scholastic achievement, cultivates a desire for personal excellence, and helps top students find success in today's highly competitive workplace.

NTHS members receive: the NTHS membership certificate, pin, card, window decal, white tassel, official NTHS diploma seal, and three personal letters of recommendation for employment, college admission, or scholarships. Students will have access to our online career center including these valuable services: MonsterTRAK, Wells Fargo, Career Safe, and Career Key

# READING-MUHLENBERG CAREER & TECHNOLOGY CENTER

## WORK BASED LEARNING

### Cooperative

### Education & Internships

#### RULES / GUIDELINES

1. All Work Based Learning (WBL) students must have school WBL forms completed and sign up for the school Remind App before starting the job/internship. Any student who is less than 18 years of age must also have a transferable work permit.
2. **ABSENT FROM SCHOOL????? – NO WORK!!!!!!!**
  - If you are absent from school in the morning, you may **NOT** go to work in the afternoon. **YOUR JOB IS PART OF YOUR SCHOOL DAY.** If you are at a **medical, social service, or court appointment** in the AM, you **may** go to work that day. However, you must bring a note **from the agency where you were**, to your attendance secretary, the next school day.
  - If you are ill, **YOU** must call your employer to inform him/her that you will not be reporting for work.
  - **IMPORTANT**: If your name is going to appear, for any reason, on your sending school absentee list, you must also **report off to Mrs. Albarran @ 610-921-7301. Failure to report off may result in removal from WBL.**
  - If **school is closed** for a holiday, in-service day, or a snow day, you **DO** go to work on those days, if you are scheduled. If you are not scheduled, you can work additional hours if your employer allows you to work. Labor Laws need to be followed.
  - If you are suspended **out of school**, you may not work at your WBL job. This includes jobs that are scheduled with after school hours.
  - **REPETITIVE ABSENCES** at school or work will result in your removal from Work Based Learning.
3. All WBL students are required to **report to the CTC every Monday**. Any additional classroom time is at the discretion of your program area teacher. You are responsible for communicating this to your employer. On the **first Monday of each month or the first day, you are at RMTC for the month**, you must report to the **Work Based Learning Office**, where you will sign in with Mrs. Hughes. Co-op students will record hours and earnings, and then return to your program area for the remainder of the school day. **Do not forget to bring your check stubs to record your hours and earnings!** Internship students will record hours. **If you miss two monthly meetings, you will be removed from WBL.**
  - Any violations of these rules will result in the following **discipline action**:
    - 1<sup>st</sup> violation – VERBAL WARNING**
    - 2<sup>nd</sup> violation – REMOVAL FROM WORK BASED LEARNING**
4. When at work, you are guided by and are responsible to your employer. Be sure to follow all of the Employers' rules and regulations because you will be terminated for the same reasons as any other employee. Upon your first week of work, obtain a contact number in case you need to call your supervisor.
5. If your work experience is terminated for any reason, you must return to school the next day, and inform your CTC teacher and the Work Based Learning Coordinator.
6. If you wish to terminate your employment, you must discuss this with your teacher and the Work Based Learning Coordinator, and leave the job properly by giving the employer a two-week notice and a letter of resignation.
7. If you have any questions concerning the rules and guidelines of Work Based Learning, please contact the WBL coordinator at 610-921-7337.

STUDENT SIGNATURE

PARENT/GUARDIAN SIGNATURE