www.rmctc.org

The Motorcycle, Marine and Small Engine Program

CIP 47.0699

Instructor: Paul Miller
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Have Questions?
Reading Muhlenberg Career & Technology Center
2615 Warren Rd
Reading, PA 19604
Telephone: 610-921-7310

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

Reading Muhlenberg
CAREER & TECHNOLOGY CENTER

Dear Parent/Guardian:

My name is Paul Miller, instructor for Motorcycle, Marine and Small Engine (MME) at Reading Muhlenberg Career and Technology Center (RMCTC). I would like to welcome your son/daughter to the MME program. It is my duty to instill the work ethics and professional skills needed to excel in the small engine repair field.

In our shop, as well as in industry, your child will learn that safety is the #1 issue. They should come to school with the desire to learn and know that there are many opportunities to gain knowledge, as well as experience, which will help your child be better prepared for gainful employment upon graduation.

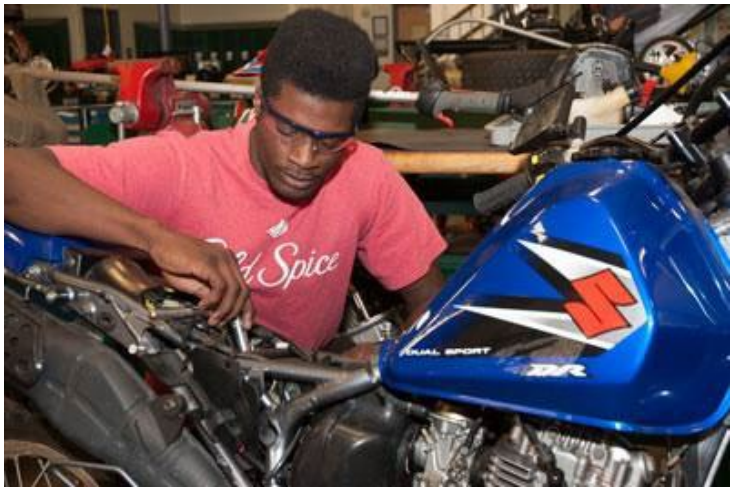
Please note, that for your convenience I have enclosed both a safety agreement and a uniform dress code that we have implemented in the MME shop. Please have your child, and yourself, sign and return both forms within one week of receiving the forms.

Sincerely,

Paul E. Miller
Motorcycle, Marine & Small Engine Instructor

Motorcycle, Marine, & Small Engine

- Acquire the skills necessary to obtain knowledge and hands-on experience to work on today's sophisticated vehicles.
- Receive training in order to obtain your PA State Inspection certifications.
- Apply the skills learned to perform factory maintenance and repair of factory machinery.
- Develop and apply the skills needed to perform repairs on equipment from lawn care machines to small diesel engines



Student Certifications

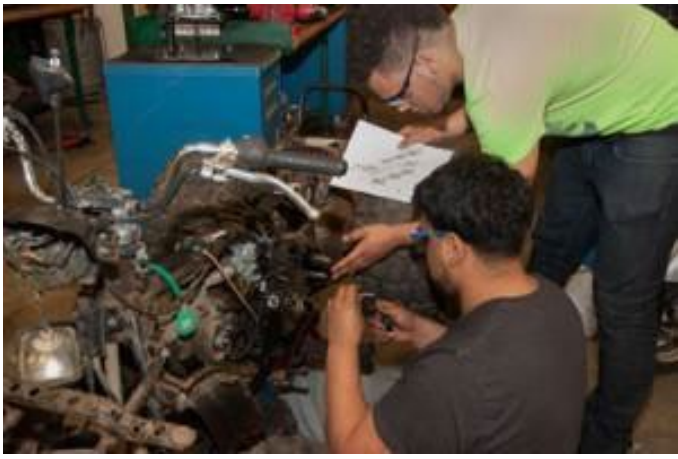
NOCTI – National Occupational Competency Testing Institute Certification
* Small Engine Technology
Pennsylvania State Certified Emissions Inspector
Pennsylvania State Certified Safety Inspector, Cat I
Pennsylvania State Certified Safety Inspector, Cat II
Pennsylvania State Certified Safety Inspector, Cat III
Outdoor Power Equipment Technician Certification
S/P2

Job Titles – Career Pathways

41-2022 Parts Salespersons
49-3051 Motorboat Mechanics
49-3052 Motorcycle Mechanics
49-3053 Outdoor Power Equipment and Other Small Engine Mechanics
49-3090 Miscellaneous Vehicle and Mobile Equipment Mechanics, Installers, and Repairers
49-9042 Maintenance and Repair Workers, General

CTC knowledge transfers to college credits at:

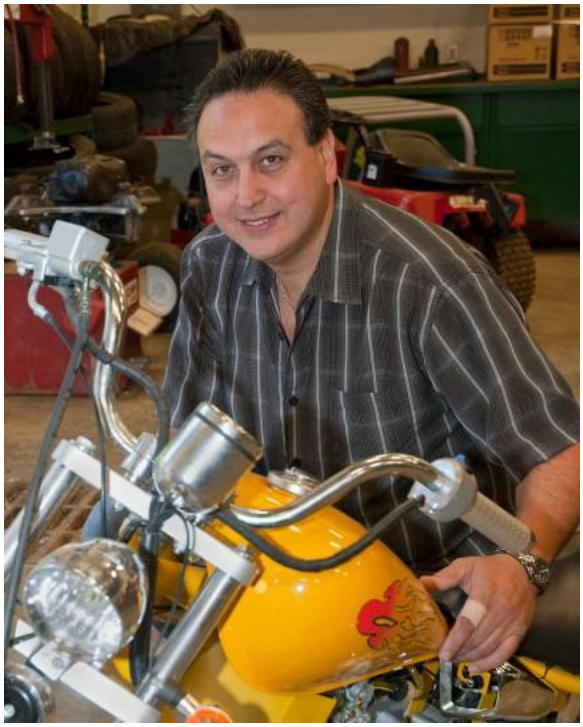
Commonwealth Technical Institute Pennsylvania College of Technology



Accreditations

EETC – Equipment Engine & Training Council

Instructor – Mr. Paul E. Miller



Biography

My entire career revolves around the maintenance and repair of all types of motorized vehicles. Upon graduation from high school, I attended and earned my certification in auto and diesel repair technology. After working as a lead diesel mechanic for 13 years, I operated my own repair station for five years. My work experience includes factory machine maintenance, diesel- and gas-powered equipment, as well as boats and motorcycles. I currently hold a Voc Ed II degree for technical education from Temple University.

Education

Degree in diesel technology from MTA School
Safety Inspector Instructor
State Emission Instructor

Certifications and Awards

Two-stroke engine and four-stroke engine certifications from EETC
Certified Inspection Mechanic for motorcycles, cars, and trucks
Certified PA Emission Inspector

Work Experience

Diesel and motorcycle mechanic for more than 20 years.

Hire Date

2007

Program Planning Tool

Program Title: **CIP 47.0699 MOTORCYCLE, MARINE & SMALL ENGINE TECHNOLOGY** 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) multiple choice test (2) performance test consisting of occupational related tasks scored & 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: PA State Motorcycle Safety Inspection certification, Outdoor Power Equipment Technician Certification, and S/P2.
- 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 25 students are assigned to work "independently" and in "small teams". Students progress through using learning guides in a self-directed manner. Working in the laboratory, students will be required to use hand tools, power tools, measuring instruments, hydraulic lifts, welding equipment, chemicals, heavy equipment, and cutting tools.
- Students will be required to properly handle and dispose of hazardous waste materials. The laboratory simulates a real working environment therefore students will be exposed to the noise levels, dust, debris, and fumes associated with the profession. Students must be alert and aware of the surroundings at all times as equipment moves in and out of the laboratory. This requires self-discipline and strict adherence to rules to ensure safety of self and others.
- Participate in classroom theory and laboratory applications for generally 2 ½ hours each day; students will spend 40% of their time in classroom theory and 60% of their time doing laboratory applications and live work.
- 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.
- Participate in Career & Technical Student Organizations including 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).
- 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 and are accessed on line.
- 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 estimated breakdown of costs: UNIFORM: $100

Program Planning Tool

CTE Requirements	Present Educational Ability/Level	Support Needs
Program Completion – 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.		
Reading and Language Arts Level- Text and manuals written on a 10^{th} – 11^{th} grade reading level. Proficient on end-of-course exam (Keystone). Must have ability to read and comprehend technical content, service manuals and interpret schematics. NOCTI assessment and industry certification exams require a proficiency in English language skills.		
Math Level - At grade level and proficient on end-of-course exam (Keystone). Knowledge of arithmetic, algebra, geometry and their applications. Must have ability to apply weights and measures, metric system, fractions, decimals and percentages. Ability also needed to estimate and measure sizes, distances, and quantities; and determine time, costs, resources, and materials needed to perform a work activity.		
Aptitude – Problem solving/diagnostic skills; aptitude for mechanical, electrical, electronic, computer technology, technical drawings and diagrams. Oral comprehension and expression, active listening, analytical thinking, attention to detail, deductive and inductive reasoning.		
Safety & Physical - Manual dexterity; fine motor skills; hand-eye-body coordination; frequent standing bending and lifting required. Multi-limb coordination, arm-hand steadiness, and extent flexibility (the ability to bend, stretch, twist or reach with body, arms and/or legs). Trunk strength and ability to lift 50 lbs. High degree of self-discipline and focus needed for safety around moving equipment, hand tools, power tools and other equipment found in the industry.		
Interpersonal/ Social - Ability to relate well to customers and coworkers; ability to work independently and as a team member; self-discipline a must due to safety issues; listening to what people are saying and understanding the points being made.		
Other Occupational/Program Considerations - Ability to work independently and read and follow directions. Stamina needed to stand for long periods of time. Good attention to detail. Environment with several sensory inputs, dust and fumes, loud and sometime startling noises, ongoing background noise, moving people and vehicles.		

Scope and Sequence Motorcycle, Marine & Small Engine Tech 47.0699

Reading Muhlenberg Career & Technology Center

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)**	**Grade12 (Hours)**	**First Semester**	**Second Semester**	**Third Semester**	**Fourth Semester**
Technical		Engine Operations and Safety	Welding	Drive Trains	AMT 111: Manual Transmission & Transaxle Principle	AMT 122: Engine Principles	AMT 235: Engine Service	AMT 241: Automotive Chassis Service
		Basic Hand Tools	Diagnose Problems in 2 and 4 Stroke Engines	Certification Prep-OPE	AMT 112: Brake Systems	AMT 123: Basic Fuel & Emission Control Systems	AMT 239: Engine Repair & Overhaul	AMT 242: Vehicle Safety Inspection
		Manuals, Ordering & Record Keeping	Engine Overhaul & Service	Principles of Electrical Systems	AMT 113: Steering and Suspension	AMT 124: Automotive Electrical/Electronic Principle	AMT 263: Electronic Power train Systems Service	AMT 274: Automotive Air Conditioning Systems & Ser
		Principles and Design of 2 & 4 Stroke Engine	Measuring and Math	Failure Analysis	AMT 119: Fundamentals of Automatic Transmissions	AMT 126: Engine Electrical Systems		AMT 276: Electrical/Electronic Accessory Service
		Lubrication Systems	Transmissions	Job Seeking/Keeping Skills				
		4 Stroke Engine Design and Components	Lubrication Systems					
		Cooling Systems	Job Seeking/Keeping Skills					
		Fuel Systems	Brake Systems					
English	College Prep English 9	College Prep English 10	College Prep English 11	College Prep English 12		ENL 111: English Comp I	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					PHS 103: Physics Survey
								PHS 114: Physics w/Technological Applications
Humanities	Citizenship	World Cultures	American History I	American Government			_HUM:Elective:HUM/SSE/ART/FOR/AAE	
Other	Physical Education	Physical Education	Physical Education	Physical Education		FIT:Elective: Fitness		
	Health	Health	Driver's Ed Theory					

47.0699 Vehicle Maintenance Technology/Other

100 - WORKPLACE SAFETY
101 - Interpret SDS Sheets.
102 - Lift and move heavy objects.
103 - Handle and store flammable materials and toxic substances.
104 - Follow OSHA rules and regulations.
105 - Identify job-site hazards.
106 - Wear personal protective equipment (safety goggles, hearing protection and respiratory protection).
107 - Select appropriate fire extinguisher according to fire type.
108 - Follow safety rules for ECP (Exposure Control Procedures) for blood borne pathogens.
109 - Use safe work habits while working with electrical systems.
200 - BASIC ELECTRICAL PRINCIPLES AND CIRCUIT TESTING
202 - Interpret electrical circuit and wiring diagrams.
203 - Use a meter to measure resistance, continuity, amperage and voltage.
204 - Solve problems using Ohms Law.
205 - Follow proper procedure for battery disposal.
206 - Construct and test series and parallel circuits.
207 - Identify electrical terminals and connectors.
208 - Perform a diode test.
212 - Inspect, test and replace fusible links, fuses and circuit breakers.
213 - Identify American Wire Gauge (AWG) wiring codes.
215 - Solder a current carrying wire.
300 - COOLING SYSTEMS
301 - Explain the concept of heat transfer and the purpose of a cooling system.
302 - Perform a cooling system flush on a liquid cooled engine.
303 - Remove, service and replace a water pump, hoses and thermostat.
304 - Identify and describe the components of a liquid cooled engine.
305 - Pressure-test a liquid-cooled cooling system.
306 - Identify causes of engine overheating.
307 - Inspect the cooling system for debris, leaks and damage.

400 - FUEL SYSTEMS
401 - Identify the types of fuel systems and explain the function of each components.
403 - Identify types of carburetor designs and their functions.
405 - Describe the operation of the idle fuel circuit and the main fuel circuit.
406 - Explain the venturi principle, and variable venturi carburetors.
407 - Describe fuel enrichment devices.
410 - Identify the function of electronic fuel injection (EFI) components.
411 - Identify the function, and components of gaseous fuel systems.
412 - Identify types and grades of fuels used in internal combustion engines
413 - Describe how fuel additives protect fuel systems.
414 - Remove, service and replace carburetor.
416 - Remove, service, and replace a fuel systems air filter and air intake assembly.
417 - Remove, service and replace a fuel pump.
418 - Install and adjust throttle and choke linkage.
419 - Adjust carburetor mixture screws per OEM specifications.
420 - Adjust carburetor float level and metering levers.
421 - Remove, service and replace a fuel tank, filters, caps and lines.
423 - Check the fuel pump pressure and flow rate.
424 - Pressure test the carburetor.
425 - Check the engine for proper starting, idle and acceleration.
428 - Remove and replace an intake manifold.
429 - Remove, service and replace EFI fuel system components.
430 - Diagnose EFI system failures.
431 - Test and replace an antibackfire/fuel shutoff solenoid.
500 - EXHAUST SYSTEMS
501 - Identify equipment problems that can occur from operating equipment with a removed or damaged exhaust system.
503 - Remove, service and replace a spark arrestor screen.
504 - Identify exhaust system components and their functions.
505 - Explain the function of a single stage catalyst (catalytic converters).
507 - Remove, service and replace an exhaust system.
600 - MEASURING AND TRADE RELATED MATHEMATICS
601 - Read a standard and a metric ruler
602 - Read and use a standard and metric micrometer
603 - Read and use a standard and metric dial indicator
604 - Use a standard and metric torque wrench
605 - Use a standard/metric dial caliper.
606 - Calculate displacement and horse power.
607 - Calculate work, power, torque, area and volume.
700 - HAND AND POWER TOOLS
701 - Use common hand tools used in the repair of outdoor power equipment.
702 - Use specialty tools used in the repair of outdoor power equipment.
703 - Use electric, air and hydraulic tools.

800 - FASTENERS
801 - Identify, select and install various fasteners according to specifications.
802 - Replace damaged internal threads using a thread repair system.
803 - Repair damaged threads, using a tap and die, chaser or a thread file.
804 - Use a thread extraction tool to remove a broken fastener.
805 - Torque fasteners according to manufacturers specifications.
900 - WELDING, HEATING AND CUTTING
901 - Follow safety rules for welding and cutting equipment.
903 - Adjust welding amperage and perform various welding repairs.
905 - Light and adjust the flame on an Oxy-Acetylene torch.
906 - Heat and cut with an oxy-acetylene torch.
907 - Set up and adjust gauges on welding, heating and cutting equipment.
1000 - 2-STROKE CYCLE ENGINE
1001 - Diagnose performance problems in a 2-cycle gasoline engine
1003 - Perform top end compression test.
1004 - Perform crankcase vacuum/pressure test.
1005 - Identify the component parts in a short block of a 2-cycle engine and explain their purposes.
1006 - Pressure test a 2-stroke cycle fuel system.
1007 - Explain 2- cycle engine operating theory.
1010 - Identify the types of 2-stroke cycle valves.
1011 - Inspect and service 2-stroke cycle exhaust systems.
1100 - 4-STROKE CYCLE ENGINE
1101 - Disassemble, clean and identify engine components.
1103 - Explain 4-cycle engine operating theory.
1105 - Inspect shaft(s) bearings and gears.
1107 - Measure crankshaft end play and run-out, and repair crankshaft if damaged.
1108 - Inspect and service valve train components.
1112 - Install valve springs using a valve spring compressor.
1113 - Adjust valve clearances/lash.
1114 - Measure cylinder bore for oversize, out of round, taper and piston to cylinder wall clearance.
1115 - Deglaze/hone a cylinder.
1116 - Perform a cylinder balance test.
1117 - Perform a cylinder compression test.
1118 - Perform a cylinder leak-down test.
1119 - Install a crankshaft, and bearings.
1120 - Install a piston using a ring compressor.
1121 - Check ring end gap and side clearance.
1122 - Verify camshaft timing.
1123 - Install all gaskets and seals where needed, according to specifications.

1200 - ENGINE FAILURE ANAYLSIS
1201 - List engine failure categories.
1202 - Identify insufficient lubrication failures.
1203 - Identify fuel system failures.
1204 - Identify cooling system failures.
1205 - Identify detonation and pre-ignition failures.
1207 - Identify the effects of over speeding.
1208 - Identify the signature breakage of a connecting rod.
1209 - Identify exhaust port piston scoring and large end bearings failure on a 2-Stroke cycle engine.
1210 - Identify the effects of excessing vibration on engine block and mounting base.
1300 - STARTING SYSTEMS
1301 - Disassemble, identify and describe the parts of a recoil starting system.
1303 - Replace a starter spring, pulley and starter rope.
1305 - Troubleshoot and repair a starting / safety interlock circuit.
1306 - Remove, service and replace a Direct Current starter.
1307 - Remove, service and replace and Alternating Current starter.
1308 - Identify and describe the components of a DC starting system.
1309 - Perform a 12-volt DC starter motor current draw test.
1310 - Remove, test and replace a starter relay or solenoid.
1400 - IGNITION SYSTEM
1401 - Identify, remove, service and replace battery ignition system components
1402 - Identify, remove, service and replace electronic ignition system components.
1404 - Check and set ignition timing/air gap.
1406 - Test an ignition system using a spark tester.
1407 - Inspect the engine for a sheared flywheel key.
1408 - Remove, inspect and replace points and condenser.
1410 - Replace a spark plug terminal and boot.
1411 - Test the solid-state transistor-controlled discharge system.
1412 - Test a capacitive discharge ignition system.
1414 - Perform timing procedures on an engine with a solid state/ electronic ignition system.
1416 - Replace an engine ignition kill switch.
1500 - CHARGING SYSTEMS
1501 - Explain battery theory and perform maintenance and storage procedures.
1502 - Identify and describe the function of charging system components.
1503 - Perform a current draw test.
1504 - Test and troubleshoot the components of a charging system
1508 - Remove and replace charging system components.

1600 - LUBRICATION SYSTEM
1603 - Change engine oil and filter on a variety of equipment.
1604 - Select proper oil and grade utilizing application charts.
1605 - Prepare a fuel/oil mixture for a 2-Stroke cycle engine.
1606 - Service a crankcase breather assembly.
1607 - Describe lubrication systems and their functions.
1608 - Interpret API oil ratings and SAE viscosity ratings.
1609 - Describe the standard classification of 2-cycle oils.
1610 - List common oil contaminants.
1611 - Describe differences between splash lubrication systems and a pressure lubrication system.
1612 - Describe the operation of various oil filtration system.
1613 - Describe methods of checking the oil level in an engine.
1615 - Identify the components and function of a crankcase ventilation breather assembly
1616 - Perform an oil pressure test.
1617 - Inspect a low-oil alert system.
1700 - GOVERNOR SYSTEMS
1701 - Perform static and dynamic governor adjustments.
1702 - Remove, service, and replace pneumatic and mechanical governor.
1703 - Check top no-load speed adjust governor as needed.
1704 - Differentiate hunting/surging symptom between the fuel system and governor system.
1800 - BRAKE SYSTEMS
1801 - Inspect, remove, service and repair mechanical brake systems.
1802 - Inspect, remove, service and repair hydraulic brake systems.
1803 - Inspect, remove service and repair drum and disc brakes.
1804 - Explain hydraulic brake theory.
1900 - CLUTCH AND DRIVE SYSTEM
1901 - Inspect, service or replace belts and tensioning devices.
1902 - Inspect, service or replace centrifugal clutches.
1903 - Inspect, service or replace clutch discs.
1904 - Inspect, service or replace sprockets and chains.
1905 - Inspect, service or replace an electric power take-off.
1906 - Inspect, service or replace universal joints.
1907 - Disassemble, service and reassemble gearboxes and components
1908 - Disassemble, service and reassemble transaxles.
1909 - Disassemble, service and reassemble hydrostatic drives.
1910 - Change hydraulic fluid and filter.

2000 - PARTS MANAGEMENT, INVOICING AND RECORDKEEPING
2001 - Interpret illustrations, graphs, diagrams, and tables.
2002 - Use reference materials, service manuals, and parts tables.
2003 - Perform inventory of parts in stock.
2004 - Locate parts and specifications using a computerized or microfiche parts reference database.
2005 - Complete a service order/invoice form.
2006 - Interpret time and flat rate information.
2007 - Order materials and supplies.
2008 - Explain a manufacturers model number, serial number, engine type number and Vehicle Identification numbers (VIN).
2100 - WHEELS AND CHASSIS SERVICE
2101 - Remove, replace or repair tubeless tire and valve stem.
2102 - Remove, replace or repair a tube type tire.
2103 - Service and replace wheel bearings and bushings.
2104 - Inspect, service and replace steering components.
2105 - Inspect, service and repair chassis.
2500* - EMPLOYABILITY SKILLS
2501* - Establish Career Goals.
2502* - Complete Job Application.
2503* - Compose Resume.
2504* - Prepare for Job Interview.
2505* - Compose Employment Letters.
2506* - Participate in Online Job Search.
2507* - Prepare Career Portfolio.
2600* - MOTORCYCLE REPAIR - RECREATION AND POWER
2601* - Identify parts of a motorcycle.
2602* - Clean and polish motorcycles.
2603* - Mount and balance motorcycle tires and wheels.
2604* - Service and replace motorcycle brake system.
2605* - Motorcycle engine parts ID and service.
2606* - Motorcycle electrical service.
2607* - Motorcycle tune up.
2700* - MARINE REPAIR
2701* - Identify and service marine equipment.
2702* - Identify and repair marine engines.
2800* - CERTIFICATION PREPARATION
2801* - Prepare to obtain auto and motorcycle inspection license.
2802* - Prepare to obtain engine certifications.
2803* - Prepare to complete online S/P2 certification.
2804* - Prepare to complete State Emission course.
2805* - Prepare to complete OSHA Certification.

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, search: PA Bureau of CTE SOAR Programs, and find your program by CIP Code.

CollegeTransfer.net
Find your way

**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.*

Dear Parent/Guardian:

Your son/daughter has made an exciting career choice by enrolling in Motorcycle, Marine & Small Engine program (MME).

Instruction in safe operation of machinery and tools are an important beginning to this instructional area. Before a student may work in the shop area they must show their ability to use tools in a safe manner.

Here is a list of tools and equipment used in the MME shop area:

Drills Welder Torch
Grinders Lifts

Cutoff saws
Air tools
Blowguns
Floor Jack

s m
H e
a r
m s

Please remember that passing report card grades and successful completion of the MME program is dependent upon your son/daughter first passing the safety test.

Thank you,

Paul E. Miller
Motorcycle, Marine & Small Engine Instructor

I have read the above information and fully understand the importance of safety in the shop.

Printed Student Name & Date

Printed Parent Name & Date

Student Signature & Date

Parent Signature & Date

Reading Muhlenberg
CAREER & TECHNOLOGY CENTER

Dear Parent/Guardian:

The Motorcycle, Marine & Small Engine program has a strict dress code that all students must participate in for safety of all our students.

Our dress code is as follows:

1. Work boots (steel toe **NOT** required)
2. Dark blue button down work shirt (short or long sleeve)
3. Dark blue work pants or coveralls
4. During hot weather, plain dark blue T-shirts are acceptable
5. No hats or jewelry in shop area

All items can be purchased at Wal-mart, Sears, K-mart, etc.

Please note that failure to follow our dress code will negatively affect your child's grade. Safety is our #1 priority. Safety glasses and shields will be supplied by our school.

There will be no exceptions to this code. If you encounter any problems finding safety uniforms, please feel free to call me 610-921-7300.

Students will have until _____to have all required safety/uniform requirements.

Thank you,

Paul E. Miller
Motorcycle, Marine & Small Engine Instructor

I have read the above information and fully understand the importance of safety in the shop.

Printed Student Name & Date

Printed Parent Name & Date

Student Signature & Date

Parent Signature & Date

Daily Work Ethic Grade - MME

Work Ethic Grade is worth 30% of your grade

Attitude is Everything!

Each student receives a daily 'Work Ethic' Grade
Values are from 10 down to 1
(Unexcused absence will result in a daily grade of '0')

10=100%; 9=90%; 8=80%; 7=70%; 6=60%; 5=50%; 4=40%; 3=30%; 2=20%; 1=10%; & 0=0%

Each student starts his/her day with a '10'
Students' can lose and regain points according to their performance

If the student is PREPARED, applies him/her self, performs well, and CLEANS UP properly that day – they will keep their '10';
if the student does NONE OF THE ABOVE, they will LOSE Work Ethic grade points!

MME WORK ETHIC POINT DEDUCTION SYSTEM – From '10'

-8 = Refuse to work (SK)
-6 = Refuse to change (SJ)
-5 = Not cleaning work area (SG)
-3 = Unauthorized area (SD)
-2 = Unacceptable language (SB)
-7 = Safety violation/horseplay (SI)
-5 = Not returning tools/equipment (SH)
-4 = Disrupting class/shop (SF)
-3 = Wasting time/materials (SE)
-1 = Late to class (SC)

Your signature below acknowledges that all rules/policies have been read and understood.

Parent Signature Date

Student Signature Date

Reading Muhlenberg
CAREER & TECHNOLOGY CENTER

ELECTRONIC DEVICES

In order to provide the best opportunities and success for our students at RMCTC, please remember the following:

- **Turn off and put away all electronic devices on the bus, prior to arriving at RMCTC.**

- **All electronic devices are not allowed to be seen or heard at RMCTC. This also pertains to outside of the building at arrival and dismissal times.**

Electronic devices include, but are not limited to, cell phones, cameras, all musical devices, tape recorders, video recorders, head sets, games and remote control items that impact audio/visual equipment.

Motorcycle / Scooter Safety Signature Form

I _____ have been instructed in the proper riding procedure of a
(student name)
motorcycle/scooter including safety rules and guidelines, as it is sometimes necessary to operate such a vehicle to be able to troubleshoot and facilitate repairs.

In order to participate in this activity, I understand that I must wear a helmet, safety glasses, proper attire and work boots. I also understand that at no time is it permissible to ride beyond the steel grate outside of the MME program area.

In addition, motorcycles/scooters may not be operated without permission from Mr. Miller, MME Instructor.

I understand that if at any time the above rules are not followed, discipline action will be taken and riding privileges will be revoked.

Parent Signature Date

Student Signature Date

STUDENT INFORMATION FORM

Please print the following information and return to your program area teacher.

Last Name	First Name	Middle Initial

Street Address	City or Township	State	Zip Code

Phone Number	Home School	Grade	Sex

Date of Birth	Program

Parent or Guardian with whom residing (name)		Relationship

Mother's Name	Address	Phone Number

Place of Employment		Phone Number

Father's Name	Address	Phone Number

Place of Employment		Phone Number

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	60%
	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 h**as 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.

National Technical Honor Society (NTHS)

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:**
     1st violation – VERBAL WARNING
     2nd 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