**CUMBERLAND PERRY AREA**

**CAREER AND TECHNICAL CENTER**

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**Transition Guide to**

**Career and Technical Education**

**2024-2025**

**INTRODUCTION**

This guide is designed to assist those who counsel and guide students for a successful transition from regular education to career and technical education. It includes career information as well as pre-requisite recommendations for reading, math, and soft skills. We hope this guide will be a useful tool for students, parents, counselors, principals, and all those who influence the career decisions of our young people.

This information should be used to ensure appropriate placement of all students, including those with special needs or IEP’s, into the Cumberland Perry Area Career and Technical Center. Appropriate placement, in addition to the provisions for necessary support services, will help to ensure that our student-enrollers successfully complete the career and technical education programs and earn the industry credentials and certifications required for an employment advantage as students compete for high priority occupations. In addition, the mission of Cumberland Perry Area CTC is to prepare students for college and career success. We offer programs with many dual enrollment opportunities so that students may earn college credits while enrolled in a career and technical program.

Each child has unique talents and challenges. We want to help students match their individual strengths and interests to the specific qualities and skills necessary for success in career and technical programs, college, and careers.

This guide was developed with input from counselors, career and technical teachers, academic teachers, members of the Local Advisory and Occupational Advisory Committees, students, and administrators. We thank everyone for their assistance.

CPACTC Administrative Team

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How to Use This Transition Guide

This transition guide will help students who are thinking of enrolling in an approved career and technical education program at CPACTC to determine the courses or support services necessary to besuccessful in specific career and technical education programs. Each page provides critical information about each program, including minimum attributes/prerequisites, math knowledge, reading level, essential physical requirements, and soft skills required to be successful in each program. Other resources to use with this book are: [www.pacareerzone.org](http://www.pacareerzone.org) or [www.onetonline.org](http://www.onetonline.org)

**Step 1** – Refer to the Table of Contents and locate the program in which the student is interested.

**Step 2** – Copy and paste the minimum attributes/prerequisites, math knowledge, reading level, essential physical requirements and recommended soft skills to **Column 1** (shaded green) on the *Gap Analysis (Discrepancy) Worksheet* on Page 1.

**Step 3** – Review the minimum attributes/prerequisites, math knowledge, reading level, essential physical requirements and recommended soft skills.

**Step 4** – Complete **Column 2** (shaded pink) on the *Gap Analysis (Discrepancy) Worksheet* with the student’s current level of performance in each of the areas identified in Column 1 (minimum attributes/prerequisites, math knowledge, reading level, essential physical requirements, and soft skills).

**Step 5** – Work with school counselors, parents, teachers, and other school personnel to identify the needed courses, supports, and services that will fill the gap between the student’s current level of performance and the essential program requirements, and document them in **Column 3** (shaded blue)on the *Gap Analysis (Discrepancy) Worksheet*.

***Program Participation Goals: A successful career and technical education student will***

* Perform a wide variety of skills and activities, including co-curricular activities, in an educational environment that mirrors the world of work.
* Purchase required materials in advance of the program, based on the information provided during New Student Orientation conducted by CPACTC annually in May.
* Complete all assignments on time and to the best of their ability.

***Program Completion Goals: A successful career and technical education student will***

* Complete the NOCTI student occupational assessment (end-of-program assessment) and score at or above the *competent* level on the timed written and performance components. Each assessment covers the full scope of the program.
* Earn at least one industry certification associated with the program of enrollment.
* Score at the proficient level on the Keystone math and Keystone reading assessments.
* Maintain attendance at the rate of 95% or better.
* Continue into post-secondary education, military, or full-time employment related to the program of study upon graduation.

If you have any questions, please contact CPACTC counseling staff (see page 66 for contact phone numbers).

Gap Analysis (Discrepancy) Worksheet

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

|  |  |  |
| --- | --- | --- |
| **Column 1** | **Column 2** | **Column 3** |
| ***CPACTC Program Requirements*** | ***Student’s Present Level of Performance and Abilities*** | ***Supports and Ancillary Services Required for Success in CTE Program*** |
| Minimum Attributes/Prerequisites |  |  |
| Math Knowledge |  |  |
| Reading Level |  |  |
| Essential Physical Requirements |  |  |
| Soft Skills |  |  |

Advanced Manufacturing

Technology



|  |  |
| --- | --- |
| **Program Name** | **Advanced Manufacturing Technology**  **CIP 48.0501** |
| **Minimum Attributes/**  **Prerequisites** | * Ability to work safely and independently with tools and equipment for periods of non-direct supervision * Ability to work productively and safely with peers for periods of non-direct supervision * Excellent hand-eye coordination * Attention to fine details |
| **Math Knowledge** | * Blueprint reading * Basic math operations, measurements, fractions, decimals * Pre-Algebra working towards Algebra I, II and Trigonometry * Ability to measure within .001 tolerances |
| **Reading Level: Textbook** | 11th Grade reading level  Dale-Chall Readability Index: 11.48 Raw Score  MS Word and CBA RDNG PROBE GENERATOR (OKAP) Grade 12 |
| **Essential Physical Requirements** | Ability to work with small and large components and stand for long periods of time |
| **Number of Written Tests per Week** | 1-2 tests (sometimes more) |
| **Daily Lecture Time** | An average of 30-40 minutes daily |
| **Number of Performance Skills per Week** | Performance skills are project based |
| **Work Qualities Assessed** | Safety rules, following directions, initiative, and dependability |
| **Weekly Homework Assignments** | Yes |
| **Number and Name of Textbooks** | 1. Immerse2learn online modules 2. CamInstructor online modules 3. Tooling with Web Based Instruction |
| **Soft Skills** | Ability to set priorities, has a teacher recommendation, demonstrates perseverance, and is attentive to fine details and **self-motivated** |
| **Uniform Requirements** | Long pants but not sweat or exercise pants, CPACTC Advanced Manufacturing T-Shirt, safety glasses provided unless prescription, and steel-toe boots/shoes |
| **Required Expenditures** | See CPACTC website |
| **Cooperative Education Requirements** | Must meet the tasks per marking period requirement, maintain good attendance (95%) and be recommended by the teacher |
| **Clinical Experience, if any, Requirements** | None |
| **Articulation or Dual Enrollment Agreements** | Statewide Articulation Agreement, see CPACTC website for details.  HACC MDES 207 and IA 205 |
| **Student Credentials** | National Industry of Metalworking Skills (NIMS),OSHA 10, credit towards the PA Manufacturer’s Pre-Apprenticeship, CPR/AED and First Aid |
| **NIMS** | Written and performance testing covering multiple areas of metal machining skills |

**Advanced Manufacturing Technology**

**Math Application Sample Problems**

1. **What would be the length of the shoulder marked (A) using the print provided?**

**6.250**

**3.125**

**4.000**

**-A-**

**2.250**

**Academic Standard:** MA.1, MA.2

**Solution**: 3.125 Then: 6.250

+ 2.250 - 5.375

5.375 0.875

****

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
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|  |  |  |  |  |  | 3 |  |  | Point 1 |
|  |  |  |  |  |  | 2 |  |  |  |
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|  |  |  |  |  |  |  |  |  |  |
|  | Point 2 |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |

1. **When programming a CNC machine, the Cartesian is used to locate a point from a part print. Using the chart below, give the location points.**

**(List the horizontal location first)**

**What is the position of point #1?**

**What is the position of point #2?**

**Academic Standard: MC.3**

**Solution: Point 1: 3, 3**

**Point 2: -3, -2**

Advertising Art

and

Design

BD05110_

|  |  |
| --- | --- |
| **Program Name** | **Advertising Art & Design**  **50.0402** |
| **Minimum Attributes/**  **Prerequisites** | * Ability to work safely and independently with tools and equipment for periods of non-direct supervision * Ability to work productively and safely with peers for periods of non-direct supervision * Creative and artistic ability * Drawing ability and color acuity * Verbal and written communication skills * Some background with computers and basic applications |
| **Math Knowledge** | Basic math operations, measurements, fractions, decimals |
| **Reading Level: Textbook** | * 11th grade reading level * Dale-Chall Readability Index: 11.48 Raw Score * MS Word and CBA RDNG PROBE GENERATOR (OKAP) Grade 12 |
| **Essential Physical Requirements** | Ability to discriminate subtle differences in color and sit for long periods of time; have fine motor skills for typing, writing, drawing, and using a mouse |
| **Number of Written Tests per Week** | Written tests are not given weekly |
| **Daily Lecture Time** | 15 minutes daily; up to three days a week |
| **Number of Performance Skills per Week** | 3 – 6 performance skills per week |
| **Work Qualities Assessed** | Safety rules, peer-worker relationships, initiative, dependability, following directions, and professionalism |
| **Weekly Homework Assignments** | One (1) per week |
| **Number and Name of Textbooks** | Adobe Classroom in a Book series |
| **Soft Skills** | Ability to multi-task and set priorities, is **self-motivated** and works well in groups, has customer service skills, and is interested in pursuing post-secondary education, or entry-level job |
| **Uniform Requirements** | CPACTC student dress code requirements: Follow CPACTC Dress Code |
| **Required Expenditures** | See CPACTC website |
| **Cooperative Education Requirements** | Must meet the tasks per marking period requirement, maintain good attendance (95%) and be recommended by the teacher |
| **Clinical Experience, if any, Requirements** | None |
| **Articulation or Dual Enrollment Agreements** | Statewide and Local Articulation Agreement, see CPACTC website for details |
| **Student Credentials** | Adobe Certified Associate Exams, Adobe.com, CPR/AED and First Aid |
| **NOCTI** | 3-hour timed 195 item multiple choice test and timed performance assessment consisting of 2 jobs (3 hours maximum) evaluated by expert industry partners that covers the full scope of the program curriculum |

**Advertising, Art and Design**

**Math Application Sample Problems**

**Bleed extends beyond trim edges on printed pieces to prevent imperfections when cut. It is typically 0.125” or an ⅛”. If bleed is added to all sides of an 8.5"x11" document what would the overall size be? Write out the answer in BOTH decimals and fractions.**

**A diagram of a red rectangular with black text

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**Academic Standard:**

CC.2.1.HS.F.4  
Use units as a way to understand problems and to guide the solution of multi-step problems.

CC.2.1.5.C.1

Use the understanding of equivalency to add and subtract fractions.

Automation and Electromechanical Technology

IN00217_

|  |  |
| --- | --- |
| **Program Name** | **Automation and Electromechanical Technology**  **CIP 15.0303** |
| **Minimum Attributes/**  **Prerequisites** | * Ability to work safely and independently with tools and equipment for periods of non-direct supervision * Ability to work productively and safely with peers for periods of non-direct supervision * Ability to work as a member of a team |
| **Math Knowledge** | * Basic math operations * Measurement * Ratios, proportion * Solving for the unknown * Completion of Algebra 1& working towards Geometry, Algebra 2 and Trigonometry |
| **Reading Level: Textbook** | 10th grade reading level  Dale-Chall Readability Index: 10.38 Raw Score  MS Word and CBA RDNG PROBE GENERATOR (OKAP) Grade 11 |
| **Essential Physical Requirements** | Excellent hand-eye coordination, steady hands, fine finger dexterity |
| **Number of Written Tests/Quizzes per Week** | One (1) per week |
| **Daily Lecture Time** | 45 minutes daily |
| **Number of Performance Skills per Week** | 5 – 10 performance skills per week. Depends on the level of difficulty. |
| **Work Qualities Assessed** | Safety rules, following directions, initiative, dependability, and  customer service skills |
| **Weekly Homework Assignments** | Typically, none if work is completed in class. Otherwise, 30 minutes per week. |
| **Number and Name of Textbooks** | 1. Amatrol Virtual Curriculum 2. National Electrical Code |
| **Soft Skills** | Has customer service and communication skills, the ability to work as a member of a team and follow directions; is tech savvy and **self-motivated** |
| **Uniform Requirements** | Long pants but not sweat or exercise pants, CPACTC Electromechanical Technology t-shirt and polo-shirt, and leather work shoes or boots |
| **Required Expenditures** | See CPACTC website |
| **Cooperative Education Requirements** | Good attendance, good grades, soft skills, and a **driver’s license** |
| **Clinical Experience, if any, Requirements** | None |
| **Articulation or Dual Enrollment Agreements** | Statewide Articulation Agreement, see CPACTC website for details |
| **Student Credentials** | OSHA 10, CPR/AED and First Aid, SACA certifications |
| **NOCTI** | Timed, 3-hour, 180 item multiple choice test and timed performance assessment consisting of 5 jobs (3.25 hour maximum) evaluated by expert industry partners that covers the full scope of the program curriculum |

**Automation and Electromechanical Technology**

**Math Application Sample Problems**

1. **Given a voltage of 10V and a current of 1mA (milliamp), what is the resistance?**

**Note:**

Ohm’s Law - V = I \* R (Ω = Ohms)

(V) Voltage = 10V Find (R) = Resistance

(I) Current = 1mA

**Academic Standard:** M2.1.11A, M2.2.11A

**Solution:**

R = V = 10V = 10 = 10,000 Ω = 10 KΩ

I 1MA .001

1. **Given a voltage of 120V and a current of 2A (amps), what is the power?**

**Note:**

Power Usage - P = I \* V

1. Current = 2A Find (P) = Power

(V) Voltage = 120V

**Academic Standard:** M2.1.11A, M2.2.11A

**Solution:**

P = I \* V = 120V \* 2A = 240W = 0.240 KW

240W = 0.24KW

1000

Automotive

Collision Technology



|  |  |
| --- | --- |
| **Program Name** | **Automotive Collision Technology**  **CIP 47.0603** |
| **Minimum Attributes/**  **Prerequisites** | * Ability to work safely and independently with tools and equipment for periods of non-direct supervision * Ability to work productively and safely with peers for periods of non-direct supervision * Ability to prioritize and multi-task * Ability to communicate (customer service skills) * Ability to work with others as a cooperative member of the team * PA driver’s license helpful |
| **Math Knowledge** | * Proportion * Ratios for mixing paint * Measure in metric and inches to at least 1/16th of an inch * Vectors for pulling a vehicle * Basic computer skills for measuring dimensions * Basic math operations (fractions, decimals, etc.) |
| **Reading Level: Textbook** | 10th grade reading level  Dale-Chall Readability Index: 10.48 Raw Score  MS Word and CBA RDNG PROBE GENERATOR (OKAP) Grade 12 |
| **Essential Physical Requirements** | Good hand-eye coordination; ability to do repetitive tasks, lift 60 lbs., and discriminate subtle differences in color and texture |
| **Number of Written Tests per Week** | 1 – 2 per week |
| **Daily Lecture Time** | 30 minutes daily |
| **Number of Performance Skills per Week** | 15 performance skills per marking period to complete POS  Requirement: 10 tasks required for grading. |
| **Work Qualities Assessed** | Safety rules, uniform, peer-worker relationships, initiative, dependability, and following directions |
| **Weekly Homework Assignments** | 1 – 2 per week |
| **Name of Textbooks** | I-CAR Online |
| **Soft Skills** | Ability to multi-task and set priorities, is **self-motivated,** works well in groups, has customer service and problem-solving skills |
| **Uniform Requirements** | T-shirt with CPACTC logo, industrial blue work pants (no holes), steel-toe safety shoes, and work gloves |
| **Required Expenditures** | See CPACTC website |
| **Cooperative Education Requirements** | Must meet the 10 tasks per marking period requirement and maintain good attendance (95%) |
| **Clinical Experience, if any, Requirements** | None |
| **Articulation or Dual Enrollment Agreements** | Statewide Articulation Agreement, see CPACTC website for details.  Pennsylvania College of Technology ABC 100 and 104 |
| **Student Credentials** | PA Safety Inspection and Emissions Certification (PennDOT), S/P2, ASE 609 Air Conditioning, I-CAR Cert., Cat 1 Safety Inspector, OSHA 10, CPR/AED and First Aid |
| **NOCTI** | 3-hour, timed 188 item multiple choice test and timed performance assessment consisting of 4 jobs (3.75 hours maximum time) evaluated by expert industry partners that covers the full scope of the program curriculum |

**Automotive Collision Technology**

**Math Application Sample Problems**

1. **A body shop charges $100 per hour labor rate, and services 3,000 vehicles per year. The average time spent on labor / vehicle is 1.75 hours. How much is the gross labor income per year of the shop?**

**Academic Standard:** MA.2, MA.3, MB.1

**Solution:**

3000 $300,000

x $100 x 1.75

$300,000 1500000

2100000

300000

$525,000.00

**2. The subframe rails on a Toyota Scion measures 85mm on the left rail and 97mm on the right rail from the center line of the car. Specified width is 88 mm. How far out of specification is the back frame rail and in what direction (away from center or towards center of vehicle)?**

**Academic Standard:** MA.2, MA.3, MB.1, MB.2, MC.1

**Solution:**

Left Right

97mm Right

88 97

- 85 - 88 85mm Left

3mm 9mm

towards away

Automotive

Technology



|  |  |
| --- | --- |
| **Program Name** | **Automotive Technology**  **CIP 47.0604** |
| **Minimum Attributes/ Prerequisites** | * Ability to work safely and independently with tools and equipment for periods of non-direct supervision * Ability to work productively and safely with peers for periods of non-direct supervision * Interest in mechanical, electronic, and diagnostic processes * Interest in analyzing problems and identifying appropriate solution * Minimal interest in manual automotive repair work * PA driver’s license helpful |
| **Math Knowledge** | * Able to read a micrometer to 0.001 of an inch * Basic mathematic operations, decimals, fractions * Pre-Algebra |
| **Reading Level: Textbook** | Grade 9 and above  Dale-Chall Readability Index: 8.27 Raw Score  MS Word and CBA RDNG PROBE GENERATOR (OKAP) Grade 9 |
| **Essential Physical Requirements** | Excellent hand-eye coordination, good peripheral vision, fine motor manual dexterity, and the ability to stand for long periods of time and lift 50 lbs. |
| **Written Tests per Week** | 1 per week |
| **Daily Lecture Time** | 40 minutes daily |
| **Performance Skills per Week** | Approximately three (3) performance skills per week |
| **Work Qualities Assessed** | Task time, safety rules, uniform, peer-worker relationships, behavior, initiative, and following directions |
| **Weekly Homework Assignments** | 1 per week |
| **Number and Name of Textbooks** | Modern Automotive Technology, James E. Duffy, (2025) 10th Edition |
| **Soft Skills** | Ability to multi-task, set priorities, problem solve, and work independently, is **self-motivated,** and has a positive attitude as well as effective listening and speaking skills |
| **Uniform Requirements** | T-shirt and long sleeved CPACTC logo shirt, industrial black work pants, leather steel-toed work boots or shoes, and safety glasses |
| **Required Expenditures** | See CPACTC website |
| **Cooperative Education Requirements** | 80% of tasks completed for Career Objective, Employment Pack |
| **Clinical Experience, if any, Requirements** | None |
| **Articulation or Dual Enrollment Agreements** | Statewide and Local Articulation Agreement see CPACTC website for details.  Pennsylvania College of Technology AMT 109, 112, 113, 126 |
| **Student Credentials** | PA Safety and Emission Inspection (PennDOT), EPA 609, OSHA 10, CPR/AED and First Aid |
| **NOCTI** | 3 hour, timed 141 item multiple choice test and timed performance assessment consisting of 4 jobs (2.5 hours maximum time) evaluated by expert industry partners that covers the full scope of the program curriculum |

**Automotive Technology**

**Math Application Sample Problems**

1. **Compression ratio is calculated by dividing two numbers: the maximum cylinder volume divided by the minimum cylinder volume. A 9:1 ratio means that the maximum cylinder volume is 9 times as large as the minimum cylinder volume. Calculate the compression ratio for an engine using the following information. When the engine is at bottom dead center, the cylinder volume is at its maximum volume of 40 cu. in. When the engine is at top dead center, the volume is at its minimum cylinder volume of 5 cu. in. What would the compression ratio for this engine be?**

**Academic Standard -** CC.2.3.8.A.1

**Solution:** 8:1

1. **Your task is to measure brake drum diameter and determine how much of a brake drum you may remove during re-surfacing before it must be replaced. A brake drum should not be more than 0.060 inches oversized. A drum that is 9.060 inches in diameter when new may not be less than 9 inches in diameter. If this drum measures 9.010 inches from normal wear, how much metal can be removed from the drum during re-surfacing?**

**Academic Standard -** CC.3.5.11-12.C

**Solution:** 9.060

9.010

.050

1. **Your task is to determine the circuit resistance (ohms) in a circuit with 12 volts and 1 amp. Ohms Law is a simple formula for calculating circuit voltage, amperage or resistance. When two of the three values are known, you must use Algebra to calculate the missing variable.**

Formulas: E = I \* R E (Volts) I (Amps) R(Ohms)

I = E/R

R = E/I

Find the circuit resistance (ohms) in a circuit with 12 volts and 1 amp.

**Standard -** 3.2.P.B4

**Solution:**  12 Ohms

Carpentry



|  |  |
| --- | --- |
| **Program Name** | **Carpentry**  **CIP 46.0201** |
| **Minimum Attributes/**  **Prerequisites** | * Ability to work safely and independently with tools and equipment for periods of non-direct supervision * Ability to work productively and safely with peers for periods of non-direct supervision * Ability to follow verbal and written directions * Excellent hand-eye coordination * Ability to work as a member of a team |
| **Math Knowledge** | * Ability to consistently measure accurately and read blueprints * **Basic math operations: (addition, subtraction, multiplication and division)** in the following areas: measurements, fractions, decimals |
| **Reading Level: Textbook** | 11th grade reading level  Dale-Chall Readability Index: 11.48 Raw Score  MS Word and CBA RDNG PROBE GENERATOR (OKAP) Grade 12 |
| **Essential Physical Requirements** | Ability to stand for long periods of time, lift a minimum of 40 lbs., and work with small and large components, in the outdoors in all types of weather conditions, and on ladders and roofs |
| **Number of Written Tests per Week** | Weekly timesheet graded each day and for the week |
| **Daily Lecture Time** | 20 minutes daily |
| **Number of Performance Skills per Week** | 5+ performance skills per week |
| **Work Qualities Assessed** | Safety rules, following directions, initiative, dependability, peer-worker relationships, clean-up, and calling-in when sick |
| **Weekly Homework Assignments** | One (1) per week |
| **Number and Name of Textbooks** | (50) Residential Construction Academy Carpentry – 5th Edition |
| **Soft Skills** | Ability to set priorities and display **self-motivation** |
| **Uniform Requirements** | CPACTC Carpentry t-shirt, suitable work pants (no shorts), and leather steel-toed work boots |
| **Required Expenditures** | See CPACTC website |
| **Cooperative Education Requirements** | Must meet the tasks per marking period requirement, maintain good attendance (95%), and be recommended by the teacher |
| **Clinical Experience, if any, Requirements** | None |
| **Articulation or Dual Enrollment Agreements** | Statewide Articulation Agreement, see CPACTC website for details |
| **Student Credentials** | OSHA 10, PBA Skills Certificate, JLG Rough Terrain Forklift Class 7, Scissor Lift, and Aerial Work Platform, CPR/AED and First Aid |
| **NOCTI** | 3-hour, timed 150 item multiple choice test and timed performance assessment consisting of 7 jobs (2.67 hours maximum) evaluated by expert industry partners that covers the full scope of the program curriculum |

**Carpentry**

**Math Application Sample Problems**

**1. Change all fractions to common denominator. You need to determine the total dimensions for a project. Your measurements are:**

3 1/2” + 3/4” + 92 5/8” + 4 1/2” + 5/8” =

**What is the total length needed to complete the project. Round your answer to the lowest common denominator.**

**Academic Standard:** MA.1, MA.2, MA.3, MB.1

**Solution:**

3 1/2” = 3 4/8”

3/4” = 6/8”

92 5/8” = 92 5/8”

4 1/2” = 4 4/8”

5/8” = 5/8”

+

99 24/8” = 102”

**2. If line length per foot of run is 12.65”, calculate the length of a rafter that is 6’ 6”. Answer must be given in inches to the nearest 1/16”.**

**Academic Standard:** MA.1, MA.2, MA.3, MB.1, MB.2, R11A.2, R11B.1, R11B.3, CEW 13.1, CEW 13.3

**Solution:**

6’ 6” = 6.5’ 12.65

x 6.5

6325

7590

82.225 = 82 1/4” or 82 3/16” (to be within 1/16”)

Computer

Networking



|  |  |
| --- | --- |
| **Program Name** | **Computer Networking**  **CIP 11.0901** |
| **Minimum Attributes/**  **Prerequisites** | * Ability to work safely and independently with tools and equipment for periods of non-direct supervision * Ability to work productively and safely with peers for periods of non-direct supervision * Interest in working with computer hardware and network equipment * Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems * Comprehension of written sentences and paragraphs in work related documents |
| **Math Knowledge** | * Knowledge of arithmetic - Algebra, Geometry, Calculus, Statistics, and their applications |
| **Reading Level: Textbook** | 13.8grade reading level, source Microsoft Word Readability-Flesch-Kincaid Grade Level. |
| **Essential Physical Requirements** | Ability to see details at close range and use your hands to work with cables in small spaces |
| **Number of Written Tests per Week** | 1 to 2 per week based on tasks and assignments |
| **Daily Lecture Time** | 30 minutes each day |
| **Number of Performance Skills per Week** | 1-2 per week |
| **Work Qualities Assessed** | Safety rules, following directions, initiative, dependability, customer service skills, self-motivation, and troubleshooting |
| **Weekly Homework Assignments** | Work is completed electronically or on a web-based platform; any unfinished work can be completed at home. |
| **Number and Name of Textbooks** | CISCO Network Academy online Text, CompTIA A+ online study guide |
| **Soft Skills** | Ability to set priorities, analyze information, evaluate results to choose the best solution, and solve problems; is self-motivated, works well in teams and is comfortable with face-to-face communication |
| **Uniform Requirements** | Royal blue CPACTC polo shirts or button-down shirts with the Computer Networking logo are preferred.  Business casual is acceptable if student does not have logo shirt. No open toed shoes. |
| **Required Expenditures** | See CPACTC website |
| **Cooperative Education Requirements** | Has good attendance, is a self-starter, and has a basic understanding of computer systems and good troubleshooting skills |
| **Experience Requirements** | None |
| **Articulation or Dual Enrollment Agreements** | Statewide and Local Articulation Agreement, see CPACTC website for details; HACC CNT 120 and 125 |
| **Student Credentials** | A+, Net+, CCNA Routing and Switching, CPR/AED and First Aid |
| **NOCTI** | 3-hour, timed 194 item multiple choice test and timed performance assessment consisting of 3 jobs (3 hour maximum) evaluated by expert industry partners that covers writing a program and design solution logic |

**Computer Networking**

**Math Application Sample Problems**

1. **Given the IP address 192.168.1.47/4, how many hosts are available per subnet?**

|  |  |  |
| --- | --- | --- |
| **(4 = subnet bits)** | Formula: 2x - 2 = Usable addresses where x = number of subnet bits | |
|  | 24 = 16 - 2 = 14 |  |

**Academic Standard:** M2.1.11A

**Solution:** 14 IPs for hosts

Four subnet bits permit sixteen address per subnet (24 = 16), minus one address for the network address and minus one for the broadcast address.

**2. Convert the following binary number to a decimal.**

11110000

**Academic Standard:** M2.1.11A

**Solution:**

Binary Number System:

Add the value of each column where an on bit (a 1 value) is located.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 128 | 64 | 32 | 16 | 8 | 4 | 2 | 1 |
| 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |

128 + 64 + 32 + 16 = 240

Computer

Programming



|  |  |
| --- | --- |
| **Program Name** | **Computer Programming**  **CIP 11.0201** |
| **Minimum Attributes/**  **Prerequisites** | * Interest in using computers and computer systems to program, write software, set up functions, enter data, and process information * Ability to read and understand information and ideas presented in writing * Ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations) * Ability to apply general rules to specific problems to produce answers that make sense |
| **Math Knowledge** | Basic understanding of Algebra & Geometry concepts |
| **Reading Level: Textbook** | Grade level appropriate; read and comprehend instructions |
| **Essential Physical Requirements** | Long periods of sitting; prolonged screen time |
| **Number of Written Tests per Week** | Varies; 2-3 theory assignments per week (not necessarily tests) |
| **Daily Lecture Time** | 40 minutes daily |
| **Number of Performance Skills per Week** | Programming lab assignments; 3-5 per week |
| **Work Qualities Assessed** | Safety, following directions, organization, behavior, and class participation |
| **Weekly Homework Assignments** | None – work not finished in class is homework |
| **Number and Name of Textbooks** | Technical Manuals for Software and Discrete Math |
| **Soft Skills** | Is self-motivated, has a growth mindset and demonstrates perseverance |
| **Uniform Requirements** | CPACTC polo shirt or business casual shirt |
| **Required Expenditures** | See CPACTC website |
| **Cooperative Education Requirements** | None currently |
| **Clinical Experience, if any, Requirements** | None |
| **Articulation or Dual Enrollment Agreements** | Harrisburg University – 10 credits possible; Local Articulation Agreement-see CPACTC website for details |
| **Student Credentials** | PCEP Certified Entry Level Python, Programmer-Python Institute, CPR/AED and First Aid |
| **NOCTI** | 3-hour, timed 166 item exam and 2-hour, timed performance assessment |

**Computer Programming**

**Math Application Sample Problems**

Math Pretest

CPACTC Computer Programming

1. **Which of these equals a negative number?**
   1. (-5) + 9
   2. (-9) + 5
   3. 5 + (-9) + 4
   4. 9 - (-5)
2. **If x=2 and y=-3, then (-x)y2 = ?**
   1. -18
   2. -12
   3. 18
   4. 12
3. **FOIL the following: (3x + 4) = ?**
   1. 9x2 + 12x + 16
   2. 25x2
   3. 9x2 + 16
   4. 9x2 + 24x + 16
4. **Simplify: 675 ÷ (6 + 9 ÷ 3)**
   1. 225
   2. 15
   3. 75
   4. 135
5. **Which of these is not a power of 2?**
   1. 1
   2. 128
   3. 64
   4. 10
6. **Show your work (x-4) (x+4) = ?**
7. **Solve using long division 9123 ÷ 6 = ?**
8. **Show your work Find area and perimeter of a square where side = 7in.**
9. **Show your work m=8 n=14, solve 7m+3mn = ?**
10. **Write 571 in expanded notation.**

**Academic Standards:**

CC.2.1.7.C.1, CC.2.2.HS.D.1, CC.2.2.HS.B.3, CC.2.1.7.B.2, CC.2.1.7.A.1, CC.2.2.HS.B.3, CC.2.1.7.B.3, CC.2.3.7.A.1, CC.2.2.HS.D.1, CC.2.1.5.A.1

**Math Pretest – Solutions**

|  |  |
| --- | --- |
| 1. b | 6. x2 – 16 |
| 1. a | 7. 1520 R 3 |
| 1. d | 8. A = 49 in., P = 28 in. |
| 1. c | 9. 392 |
| 1. d | 10. 5x102 + 7x101 + 1x100 |

Cosmetology



|  |  |  |
| --- | --- | --- |
| **Program Name** | **Cosmetology**  **CIP Code 12.0401** | |
| **Minimum Attributes/**  **Prerequisites** | * Ability to work safely and independently with tools and equipment for periods of non-direct supervision * Ability to work productively and safely with peers for periods of non-direct supervision * Creative and artistic ability * Verbal communication skills | * Spatial and form perception * Reading comprehension * Cognitive retention * Recall * Focus * Sequential learning * Visual / Auditory processing |
| **Math Knowledge** | * Basic math operations * Measurements (fractions & decimals) | |
| **Reading Level: Textbook** | Reading level – grade 13  Dale-Chall Readability Index: 10.48 Raw Score  MS Word and CBA RDNG PROBE GENERATOR (OKAP) Grade 10 | |
| **Essential Physical Requirements** | Ability to discriminate subtle differences in color, stand for long periods, and repetitively use hands and arms; visual/auditory ability | |
| **Number of Written Tests per Week** | 1 – 2 per week | |
| **Daily Lecture Time** | 40 minutes daily | |
| **Number of Performance Skills per Week** | 10 – 15 per week | |
| **Work Qualities Assessed** | Safety, hygiene, customer service skills, professionalism, uniform, and duties | |
| **Weekly Homework Assignments** | 1 – 2 per week | |
| **Number and Name of Textbooks** | Milady, Pivot Point text and study guide | |
| **Soft Skills** | Has customer service skills and the ability to set priorities; is **self-motivated** and people-oriented | |
| **Uniform Requirements** | Smock, White waterproof shoes (no holes), and black scrub pants | |
| **Required Expenditures** | See CPACTC website | |
| **Cooperative Education Requirements** | Must complete 1250 cosmetology hours and be scheduled for the state board examination before being placed on Cooperative Education | |
| **Clinical Experience, if any, Requirements** | None | |
| **Articulation or Dual Enrollment Agreements** | Local Articulation Agreement, see CPACTC website for details | |
| **Student Credentials** | State Board of Cosmetology license (Cosmetologist), Barbicide, CPR/AED and First Aid | |
| **NOCTI** | 3-hour, timed 134 item multiple choice test and timed performance assessment consisting of 5 jobs (3.0 hour maximum) evaluated by expert industry partners that covers the full scope of the program curriculum | |

**Cosmetology**

**Math Application Sample Problems**

**1. Ms. Rodman purchased shampoo for $8.50 and conditioner for $14.95. What is the total for both products? Include 6% sales tax.**

**Academic Standard:** A2.2.1.1, C2.2.1.1

**Solution:**

$14.95 + $8.50 = $23.45 x .06 = $1.407 $23.45 + $1.41 = $24.86 total

**2. If Tina makes 45% commission and her weekly total is $1,695.00 in services, how much commission did she earn?**

**Academic Standard:** B2.2.1.1

**Solution:**

$1,695.00

x .45%

$762.75 commission

Criminal

Justice

IN01101_

|  |  |
| --- | --- |
| **Program Name** | **Criminal Justice**  **CIP 43.0107** |
| **Minimum Attributes/**  **Prerequisites** | * Ability to work safely and independently with tools and equipment for periods of non-direct supervision * Ability to work productively and safely with peers for periods of non-direct supervision * Ability to follow written or verbal instructions * Courtesy and a professional presence * Basic verbal and written communication skills * Clean criminal background |
| **Math Knowledge** | Basic math operations |
| **Reading Level: Textbook** | 11th grade reading level  Dale-Chall Readability Index: 11.48 Raw Score  MS Word and CBA RDNG PROBE GENERATOR (OKAP) Grade 12  Ability to read technical manuals (software and hardware applications) |
| **Essential Physical Requirements** | Ability to lift objects, have physical contact with others, and perform self-defense |
| **Number of Written Tests per Week** | 1 – 2 per week |
| **Daily Lecture Time** | 20 minutes daily per lesson |
| **Number of Performance Skills per Week** | 1 – 3 performance skills per week |
| **Work Qualities Assessed** | Safety rules, following directions, dependability, personal appearance and demeanor, participation (teamwork), and attendance |
| **Weekly Homework Assignments** | If on task, less than 1 hour in the evening. |
| **Number and Name of Textbooks** | 1. Criminal Justice Today (Fagin) 2. Criminal Investigation (Gilbert) 3. PA Crime Code (Title 18) 4. PA Vehicle Code (Title 75) |
| **Soft Skills** | Self-disciplined and **self-motivated** |
| **Uniform Requirements** | Gray CJ shirt, black uniform trousers, black polish-able footwear, and physical fitness shirt |
| **Required Expenditures** | See CPACTC website |
| **Cooperative Education Requirements** | Generally, students must be over 18. Student must find employer, employer and job must be approved by Criminal Justice Instructor and Co-Op Coordinator. Student must also have good grades and good attendance. |
| **Clinical Experience, if any, Requirements** | None |
| **Articulation or Dual Enrollment Agreements** | Statewide and Local Articulation Agreements, see CPACTC website for details |
| **Student Credentials** | National Incident Management, CPR/AED and First Aid |
| **NOCTI** | 3-hour, timed 188 item multiple choice test and timed performance assessment consisting of 3 jobs (2.17 hour maximum) evaluated by expert industry partners that covers the full scope of the program curriculum |

**Criminal Justice**

**Math Application Sample Problems**

1. **When citing for speeding, the fine is $35.00 plus $2.00 per mile for each mile in excess of 5 mile per hour over the maximum speed limit. If you stop a person traveling 75 miles per hour in a 25 mile per hour zone, what is the total fine?**

**Academic Standard:** 2.5.11A

**Solution:** 75 mph

* 25 mph

50 mph

* 5 in excess of 5 mph = $35.00 (fine fee)

45 mph x $2.00 per mile = + $90.00

$125.00 total fine

**2. You must follow a person (clock) in their vehicle for .3 miles to make an arrest. How many feet must you follow them?**

**Note: 5,280 ft. = 1 mile)**

**Academic Standard:** 2.5.11A

**Solution:** 5280

x .3

1,584 feet

Culinary

Arts



|  |  |
| --- | --- |
| **Program Name** | **Culinary Arts**  **CIP 12.0508** |
| **Minimum Attributes/**  **Prerequisites** | * Ability to work safely and independently with **tools and equipment** for periods of non-direct supervision * Ability to work productively and safely with **peers** for periods of non-direct supervision |
| **Math Knowledge** | * Basic math operations * Fractions * Proportions * Ratios * Standard units of measure |
| **Reading Level: Textbook** | 8h grade reading level  Dale-Chall Readability Index: 9.28 Raw Score  MS Word and CBA RDNG PROBE GENERATOR (OKAP) Grade 9  Ability to read technical manuals (software and hardware applications) |
| **Essential Physical Requirements** | Ability to stand for long periods of time, move quickly on one’s feet, **and lift 50 lbs.** |
| **Number of Written Tests per Week** | 1 quiz every 1.5 – 2 weeks |
| **Daily Lecture Time** | 30 minutes daily |
| **Number of Performance Skills per Week** | 2 – 3 performance skills per week |
| **Work Qualities Assessed** | Safety rules, following verbal and written directions, initiative, dependability, and customer service skills |
| **Weekly Homework Assignments** | 1 – 2 per week |
| **Number and Name of Textbooks** | Professional Cooking 6th Edition  ServSafe 5th Edition  ProStart Level 1  ProStart Level 2 |
| **Soft Skills** | Customer service skills, **self-motivation,** and honesty |
| **Uniform Requirements** | Pearl-button chef coat, black pants (no yoga), white long-sleeved shirt, checkered, baggy chef pants, apprentice hat, chef bib apron, and leather-type safety shoes |
| **Required Expenditures** | Uniform and attendance at 1 afterschool event per year. See CPACTC website for more information. |
| **Cooperative Education Requirements** | Must complete 80% of task list |
| **Clinical Experience, if any, Requirements** | None |
| **Articulation or Dual Enrollment Agreements** | Statewide and Local Articulation Agreements, see CPACTC website for details |
| **Student Credentials** | ServSafe Manager, ServSafe Allergens Prostart I and II, ACF Certified Fundamentals Cook, CPR/AED and First Aid |
| **NOCTI** | 3-hour, timed 203 item multiple choice test and timed performance assessment consisting of 4 jobs (3 hour maximum) evaluated by expert industry partners that covers the full scope of the program curriculum |

**Culinary Arts**

**Math Application Sample Problems**

**1. A bushel of spinach weighs 25 lbs. How many 4-ounce portions can you obtain from the bushel?**

**Note:**

16 oz. = 1 lb.

**Academic Standard:** MA.2

**Solution:**

Convert 25 lbs. to ounces (16 ounce = 1 lb.)

25 lbs. x 16 ounces = 400 ounces

400 / 4 = 100 four-ounce portions

**2. Find the cost per bottle of 6 one-gallon bottles that sell for $73.50? What is the cost per fluid ounce?**

**Note:**

8 oz. = 1 cup

2 cups = 1 pint

2 pints = 1 quart

4 quarts = 1 gallon

**Academic Standard:** MA.2

**Solution:**

$73.50 divided by 6 bottles = $12.25 per bottle

128 ounces = 1 Gallon

$12.25 / 128 = .0957 or rounding up, it would be about $.10 per fluid ounce

Dental

Assisting



|  |  |
| --- | --- |
| **Program Name** | **Dental Assistant**  **CIP 51.0601** |
| **Minimum Attributes/**  **Prerequisites** | * Ability to work safely and independently with **tools and equipment** for periods of non-direct supervision * Ability to work productively and safely with **peers** for periods of non-direct supervision * Ability to work in close contact with others |
| **Math Knowledge** | * Basic math operations * Fractions * Proportions * Ratios * Standard units of measure |
| **Reading Level: Textbook** | 12th grade reading level  Dale-Chall Readability Index: 12.28 Raw Score  MS Word and CBA RDNG PROBE GENERATOR (OKAP) Grade 12  Ability to read and comprehend medical terminology |
| **Essential Physical Requirements** | Ability to stand for long periods of time, bend, stoop, and use hands to work within small spaces |
| **Number of Written Tests per Week** | 1 – 2 per week |
| **Daily Lecture Time** | 0.5 – 1 hour daily |
| **Number of Performance Skills per Week** | 1 – 2 performance skills per week |
| **Work Qualities Assessed** | Safety rules, following directions, initiative, dependability,  customer service skills, and high personal and dental hygiene |
| **Weekly Homework Assignments** | 2 per week |
| **Number and Name of Textbooks** | 1. Modern Dental Assisting 2. Dental Radiology |
| **Soft Skills** | Is **self-motivated,** has customer service skills, and theability to work as a member of a team and with patients |
| **Uniform Requirements** | Colored specific scrubs and scrub pants, and white leather shoes |
| **Required Expenditures** | See CPACTC website |
| **Externship Requirements** | Good attendance, good grades, proficient in assisting, and PA driver’s license |
| **Clinical Experience, if any, Requirements** | Level III – Spring Clinical Externship, need to provide own transportation |
| **Articulation or Dual Enrollment Agreements** | See CPACTC website for details |
| **Student Credentials** | State Board of Dentistry Dental Radiographic Exam; DANB Infection Control and Radiation Health & Safety, OSHA 10, CPR/AED, First Aid, Bloodborne Pathogens, and HIPPA |
| **NOCTI** | 3-hour, timed 207 item multiple choice test and timed performance assessment consisting of 7 jobs (1.75 hrs. maximum) evaluated by expert industry partners that covers the full scope of the program curriculum |

**Dental Assistant**

**Math Application Sample Problems**

1. **IF the PID on the x-ray machine is changed from 8 inches to 16 inches, how does this increase in the source-to-receptor distance affect the intensity beam?**

**Academic Standard:** 2.2B

**Solution:**  1/x = 162/82 1/x = 256/64 1/x = 4/1 x= 1/4

**2. If you are processing dental x-ray film, determine the amount of time the film must remain in the fixer solution.**

**Solution Temperature Time Developer Rinse Time Time In Fixer Wash Time**

**65° 3.0 mins. .05 ? mins. 20 mins.**

**Note:** Fixer time is double the developer time amount.

**Academic Standard:** MD.2

**Solution:**

3.0

x 2

6.0 Minutes

Diesel

Technology

IN00561_

|  |  |
| --- | --- |
| **Program Name** | **Diesel Technology**  **CIP 47.0613** |
| **Minimum Attributes/**  **Prerequisites** | * Ability to work safely and independently **with tools and equipment** for periods of non-direct supervision * Ability to work productively and safely **with peers** for periods of non-direct supervision * PA driver’s license is helpful |
| **Math Knowledge** | * Basic math operations * Fractions * Proportions * Ratios * Measurement |
| **Reading Level: Textbook** | 11th grade reading level  Dale-Chall Readability Index: 11.78 Raw Score  MS Word and CBA RDNG PROBE GENERATOR (OKAP) Grade 12  Ability to read and comprehend technical manuals and diagrams |
| **Essential Physical Requirements** | Ability to stand for long periods of time, bend, stoop, and work in tight spaces |
| **Number of Written Tests per Week** | 1 per week |
| **Daily Lecture Time** | 35 minutes daily |
| **Number of Performance Skills per Week** | 1 – 3 performance skills per week |
| **Work Qualities Assessed** | Safety rules, following directions, initiative, dependability,  customer service skills, and productivity |
| **Weekly Homework Assignments** | 1 extensive assignment per week |
| **Number and Name of Textbooks** | 1. Diesel 1 – CDX Medium/Heavy Duty Diesel Engines 2nd Edition 2. Diesel 2 & 3 – CDX Medium/Heavy Duty Commercial Vehicle Systems, 2nd Edition |
| **Soft Skills** | Is **self-motivated** and committed to high quality work; has customer service skills and the ability to work as a member of a team |
| **Uniform Requirements** | Dark blue CPACTC shirt and dark blue work pants, and leather steel-toed work shoes or boots |
| **Required Expenditures** | See CPACTC website |
| **Cooperative Education Requirements** | Displays appropriate behavior, and has PA driver’s license and passing grades |
| **Clinical Experience, if any, Requirements** | None |
| **Articulation or Dual Enrollment Agreements** | See CPACTC website for details |
| **Student Credentials** | PennDOT Safety and Emissions Inspection, CAT I-7 Safety Inspector; EPA 608 and 609 Certifications, OSHA 10, CPR/AED and First Aid |
| **NOCTI** | 3-hour, timed 155 item multiple choice test and timed performance assessment consisting of 5 jobs (2.5 hours maximum time) evaluated by expert industry partners that covers the full scope of the program curriculum |

**Diesel Technology**

**Math Application Sample Problems**

**1. A crankshaft has a connecting rod journal diameter of 3.218”. The inside diameter of the installed connecting rod bearing is 3.229”.**

1. **What is the oil clearance?**
2. **If the specification for maximum clearance is 0.0055, is this bearing installation within specification?**

(Note: The oil clearance is calculated by finding the difference between the outside diameter of the connecting rod journal and the inside of the bearing in the connecting rod.)

**Academic Standard:** MA11.1, MA11.2, MB11.1

**Solution:**

3.229 (Inside Diameter)

- 3.218 (Outside Diameter of Journal)

.011” (Clearance)

Maximum clearance is .0055”. .011 > .0055. Therefore, this bearing set exceeds specification and should not be used.

**2. A truck tire measures 40” in diameter. How many times will this tire rotate in 1 mile?**

**Note:**

1 mile = 5,280 feet

Tire circumference = diameter x 3.14

**Academic Standard:** MA11.1, MA11.2

**Solution: (Hint: Convert tire circumference into feet before determining the answer)**

1 Mile = 5,280 feet

40” x 3.14 = 125.60” (tire circumference)

125.60 / 12 = 10.47 feet (tire circumference in feet)

5,280 feet (1 mile) / 10.47 = 504.30 rotations per mile

Early Childhood Education



|  |  |
| --- | --- |
| **Program Name** | **Early Childhood Education**  **CIP 19.0708** |
| **Minimum Attributes/**  **Prerequisites** | * Ability to work safely and independently with **tools and equipment** for periods of non-direct supervision * Ability to work productively and safely with **peers** for periods of non-direct supervision * Patience and the ability to work with small children |
| **Math Knowledge** | * Basic math operations * Measurements * Fractions |
| **Reading Level: Textbook** | 11th grade reading level  Dale-Chall Readability Index: 11.48 Raw Score  MS Word and CBA RDNG PROBE GENERATOR (OKAP) Grade 12 |
| **Essential Physical Requirements** | Ability to work with small children ad well as stand, stoop and kneel for long periods |
| **Number of Written Tests per Week** | 1 test every 2 weeks  About 10 quizzes per marking period |
| **Daily Lecture Time** | 40 minutes daily |
| **Number of Performance Skills per Week** | 2 – 4 performance skills per week |
| **Work Qualities Assessed** | Safety rules, following directions, initiative, dependability, and peer-worker relationships |
| **Weekly Homework Assignments** | 3 – 4 per week. (If time is used wisely, the students can usually finish their homework in class) |
| **Number and Name of Textbooks** | Working with Young Children |
| **Soft Skills** | Able to set priorities, is **self-motivated,** and displays patience and perseverance |
| **Uniform Requirements** | CPACTC ECT t-shirt, jeans, casual pants, scrubs or capris and enclosed shoes |
| **Required Expenditures** | See CPACTC website |
| **Cooperative Education Requirements** | Must meet the tasks per marking period requirement, maintain good attendance (95%), and be recommended by the teacher |
| **Clinical Experience, if any, Requirements** | None |
| **Articulation or Dual Enrollment Agreements** | Statewide and Local Articulation Agreement, see CPACTC website for details  Shippensburg University ECH 204, 205, and 206 |
| **Student Credentials** | Child Development Associate (CDA) Certification; Act 31 Mandatory Reporter, Health & Safety Basics/Better Kids Care, CPR/AED and First Aid |
| **NOCTI** | 3-hour, timed 190 item multiple choice test and timed performance assessment consisting of 6 jobs (2 hour maximum) evaluated by expert industry partners that covers the full scope of the program curriculum |

**Early Childhood Education**

**Math Application Sample Problems**

1. **FCCLA wants Mrs. Rahn to purchase a case of spicy beef sticks at B.J.’s for a fund raiser.**

**One box of beef sticks costs $12.69 and the case contains 24 boxes. How much would the case of 24 boxes cost the club? How much would 1 beef stick cost if there were 24 sticks in a box costing $12.69?**

**Academic Standard:** CC.2.2.HS.D.2

**Solution:** 24 x $12.69 = $304.56

**Solution:** $12.69 ∕ 24 = $.5287 or $.53 per beef stick

1. **The Department of Public Welfare requires tables and countertops be sanitized before food preparation is started or children eat at the table surfaces.**

**Sanitizing solution consists of ¼ cup bleach to one gallon of water. In the CPACTC preschool this is far too much solution to use in one day since it needs to be mixed fresh every day. About ¼ of this is enough for each preschool session.**

1. **How much water would be needed for the reduced measurement?**
2. **How much bleach would be needed for the reduced amount of water?**

**Note:**

There are 32 tsp. in 1 cup

There are 4 quarts in 1 gallon

**Academic Standard:** CC.Z.2.H.S.D.10.

**Solution:** 1 gallon has 4 quarts so we would need 1 quart of water.

Bleach – ¼ cup has 4 tablespoons – so ¼ of 4 is one tablespoon.

The smaller amount would be 1 tablespoon of bleach to 1 quart of water.

Electrical

Construction

&

Maintenance



|  |  |
| --- | --- |
| **Program Name** | **Electrical Construction Maintenance**  **CIP 46.0399** |
| **Minimum Attributes/**  **Prerequisites** | * Ability to work safely and independently with **tools and equipment** for periods of non-direct supervision * Ability to work productively and safely with **peers** for periods of non-direct supervision * Ability to work with others as a cooperative member of a team |
| **Math Knowledge** | * Basic math operations * Fractions & decimals * Ability to measure to 1/16 of an inch * Completion of Pre-Algebra working towards Algebra 1 * Ability to solve for unknown variables |
| **Reading Level: Textbook** | 10th grade reading level  Dale-Chall Readability Index: 10.48 Raw Score  MS Word and CBA RDNG PROBE GENERATOR (OKAP) Grade 12  Ability to read and understand technical manuals (Code books) |
| **Essential Physical Requirements** | Have good hand-eye coordination, physical strength, and stamina; ability to do repetitive tasks, lift 75 lbs., discriminate subtle differences in color and texture, and bend, stoop and stand for long periods |
| **Number of Written Tests per Week** | 2 per month |
| **Daily Lecture Time** | 30 minutes daily |
| **Number of Performance Skills per Week** | 8 – 10 performance skills for each marking period |
| **Work Qualities Assessed** | Safety rules, uniform, peer-worker relationships, initiative dependability, and following directions |
| **Weekly Homework Assignments** | Any unfinished in-class work is assigned as homework |
| **Number and Name of Textbooks** | 1. NEC 2023 2. NCCER Level 1 & 2 3. Training Alliance Pre-apprenticeship |
| **Soft Skills** | Multi-task, set priorities and problem solve; **self-motivation;** teamwork; customer service skills and a positive attitude |
| **Uniform Requirements** | Leather work shoes or boots, ECM work shirt, and dark blue jeans / khaki pants |
| **Required Expenditures** | See CPACTC website |
| **Cooperative Education Requirements** | Must meet the tasks per marking period requirement, maintain good attendance (95%) and be recommended by the teacher |
| **Clinical Experience, if any, Requirements** | None |
| **Articulation or Dual Enrollment Agreements** | Statewide and Local Articulation Agreement, see CPACTC website for details |
| **Student Credentials** | OSHA 10, PBA Certificate, NJATC and IEC 1st Year Apprenticeship, CPR/AED and First Aid |
| **NOCTI** | 3-hour, timed 198 item multiple choice test and timed performance assessment consisting of 2 (3.33 hour maximum) jobs evaluated by expert industry partners that covers the full scope of the program curriculum |

**Electrical Construction and Maintenance**

**Math Application Sample Problems**

1. **A house has two floors measured at 28’ x 40’. General lighting is based on 3 watts per square feet. How many watts are required for this house? Round to a whole number.**

**Note: Total Square Feet = length x width x number of floors**

**Academic Standard:** CC.2.1.HS.FS

**Solution:**

28 x 40 x 2 = 2240 total square feet

2240 / 3 = 747 watts

1. **An electrician is paid $1,420.00 in January; $1,560.00 in February; in March $1,878.00; in April $1,925.00, and in May and June a total of $2,016.00. What is his average monthly pay?**

**Academic Standard:** CC.2.1.HS.FS Apply quantitative reasoning to choose and interpret units and scales in formulas, graphs, and data.

**Solution:**

1420 8799 / 6 = 1466.50

1560

1878

1925

+ 2016

$8,799.00

**3. Find the total capacitance of the circuit if capacitors are in series.**

**C1 = 13 µf, C2= 15 µf, C3 = 102 µf**

**Academic Standard:** CC.2.1.HS.FS

**Solution:**

CT = 1 = 1 CT = 6.5 µf

1 + 1 + 1 1 + 1 + 1

C1  C2 C3 13 15 102

Healthcare Pathways



|  |  |
| --- | --- |
| **Program Name** | **Healthcare Pathways**  **CIP 51.0899** |
| **Minimum Attributes/**  **Prerequisites** | * Ability to work safely and independently with **tools and equipment** for periods of non-direct supervision * Ability to work productively and safely with **peers** for periods of non-direct supervision and display maturity * Ability to work in close contact with others |
| **Math Knowledge** | * Basic math operations * Fractions, proportions, & ratios * High degree of accuracy in measurement |
| **Reading Level: Textbook** | 12th grade reading level – Ranges from 6th grade to college level depending on the program  Dale-Chall Readability Index: 12.28 Raw Score, MS Word  Ability to read and comprehend medical terminology |
| **Essential Physical Requirements** | Ability to **lift 40lbs.,** stand for long periods of time, bend and stoop |
| **Number of Written Tests per Week** | 1 – 4 tests per week, including skill testing, medical terminology/abbreviations, chapter tests, and/or section tests |
| **Daily Lecture Time** | 25 – 30 minutes daily |
| **Number of Performance Skills per Week** | 1 – 2 performance skills per week (more for nursing assistant program) |
| **Work Qualities Assessed** | Safety rules, following directions, initiative, dependability,  customer service skills, high personal hygiene, and professionalism |
| **Weekly Homework Assignments** | 1 – 5 per week |
| **Number and Name of Textbooks** | 1. Diversified Health Occupations 7th Edition 2. Biology 105 3. Nurse Aide Text 4. EKG / Phlebotomy 5. Pharmacy Technician 6. Office Procedures |
| **Soft Skills** | Communication skills; customer service skills; **self-motivation**; work as a member of a team while putting the needs of the patient first, knowledge of HIPAA, and time management skills |
| **Uniform Requirements** | Scrubs (according to level) and all white or black leather shoes or clogs without holes |
| **Required Expenditures** | See CPACTC website |
| **Cooperative Education Requirements** | **Good grades**, **good attendance**, driver’s license, and approval by instructor |
| **Clinical Experience, if any, Requirements** | Level III is required to complete a 6 day, 8 hours per day, clinical rotation for CNA Certification |
| **Articulation or Dual Enrollment Agreements** | State and Local Articulation Agreement, see CPACTC website for details. EHP Program-Messiah University BIO 185L and 186L/ HACC BIOL 121 and 122 and PA College of Technology MTR 100 |
| **Student Credentials** | AMCA Phlebotomy Tech, MAAC, Nurse Aide Certification (CNA), Act 31 Mandated Reporter, NHA Pharmacy Tech., CPR/AED, First Aid, and OSHA 10 |
| **NOCTI** | 3-hour, timed 154 item multiple choice test and timed performance assessment consisting of 5 (2 hr. maximum) jobs evaluated by expert industry partners that covers portions of the program curriculum related to patient care |

**Healthcare Pathways**

**Math Application Sample Problems**

**1. A baby weighs 10.9 kilograms. How many pounds does the baby weigh?**

**Note: 2.2 lbs equals 1 kg**

**Academic Standard:** 805- Measure and record height and weight.

**Solution:** 24 lbs / 2.2 = 10.9kg

**2. Heparin comes 5000 units/ml. A patient is ordered 3000 units. How many ml is needed?**

**Academic Standard:** 834- Describe medication administration to a client, utilizing proper medical math.

**Solution:**

3000 units/x  = 5000units/1 ml

Cross multiply

3000 units/ml = 5000 units (X)

3000units/ml/5000 units = x

3/5 ml = x

Or

0.6 ml = x

Heating, Ventilation &

Air Conditioning



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| **Program Name** | **Heating, Ventilation, & Air Conditioning**  **CIP 47.0201** |
| **Minimum Attributes/**  **Prerequisites** | * Ability to work safely and independently with **tools and equipment** for periods of non-direct supervision * Ability to work productively and safely with **peers** for periods of non-direct supervision * Ability to work as a member of a team |
| **Math Knowledge** | * Basic math operations * Measurement * Ratios & proportion * Solving for the unknown * Completion of Pre-Algebra - working towards Alg. I and II |
| **Reading Level: Textbook** | 8th grade reading level  Dale-Chall Readability Index: 8.18 Raw Score  MS Word and CBA RDNG PROBE GENERATOR (OKAP) Grade 8 |
| **Essential Physical Requirements** | Ability to stand for long periods of time, bend and stoop, lift 60 lbs., and work in small spaces |
| **Number of Written Tests per Week** | 1 every week or every other week |
| **Daily Lecture Time** | 35 minutes daily |
| **Number of Performance Skills per Week** | 7 performance skills per marking period |
| **Work Qualities Assessed** | Safety rules, following directions, initiative, dependability, and  customer service skills |
| **Weekly Homework Assignments** | 1 every week or every other week |
| **Number and Name of Textbooks** | 1. Fundamentals of HVAC/R 2. Electricity and Controls for HVAC/R 3. Residential Construction Academy for HVAC/R |
| **Soft Skills** | Has customer service skills and **self-motivation,** is reliable, follows directions, works well in teams, and solves problems |
| **Uniform Requirements** | Leather, steel-toed boots with non-slip soles, dark blue CPACTC t-shirt, and dark blue work pants (no jeans) |
| **Required Expenditures** | See CPACTC website |
| **Cooperative Education Requirements** | Task 1280 and/or with instructor’s permission |
| **Clinical Experience, if any, Requirements** | None |
| **Articulation or Dual Enrollment Agreements** | State and Local Articulation Agreement, see CPACTC website for more details |
| **Student Credentials** | OSHA 10; PBA Endorsement, EPA 608, CPR/AED and First Aid |
| **NOCTI** | 3-hour, timed 120 item multiple choice test and timed performance assessment consisting of 2 jobs (3 hour maximum) evaluated by expert industry partners that covers the full scope of the program curriculum |

**Heating, Ventilation, and Air Conditioning**

**Math Application Sample Problems**

1. **Given a voltage of 208V and 10A, find the resistance.**

Note:

Ohms Law E = I x R E = Volts

I = E ÷ R I = Amps

R = E ÷ I R = Resistance

**Academic Standard:** M11.A.2.1.1, M11.A.2.1.2, M11.A.2.1.3

**Solution**: E = 208 208 ÷ 10 = 20.8 amps

I = 10

R = ??

1. **Given original absolute pressure of 115 PSIG, and new absolute pressure of 215 PSIG, and original volume of 2 cubic inches, find the new volume.**

Note:

Gas Laws P1 = Original Absolute Pressure

V1 = Original Volume

P2 = New Absolute Pressure

V2 = New Volume

T1 = Original Absolute Temp

T2 = New Absolute Temp

**Academic Standard:** M11.A.2.1.1, M11.A.2.1.2, M11.A.2.1.3

**Solution:** Use mathematical equation P1 x V1 = P2 x V2

P1 = 115

P1 = 115 PSIA P2 = 215

V1 = 2 Cubic Inches

P2 = 215 PSIA 115 x 2 = 215 x X

V2 = ?? 230 = 215 x

230 ÷ 215 = 1.07 X = 1.07

V2 = 1.07

Horticulture

&

Landscaping

IN00303_

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| **Program Name** | **Horticulture and Landscaping**  **01.0601** |
| **Minimum Attributes/**  **Prerequisites** | * Ability to work safely and independently with **tools and equipment** for periods of non-direct supervision * Ability to work productively and safely with **peers** for periods of non-direct supervision Interest in working with plants * Willing to work in dirt and extreme temperatures |
| **Math Knowledge** | * Basic math operations * Measurements, * fractions, percentages, & decimals * Ability to measure ounces and fractions of inches * Ability to do money conversion from dollar to cents etc. |
| **Reading Level: Textbook** | 8th grade reading level  Dale-Chall Readability Index: 9.24 Raw Score  MS Word and CBA RDNG PROBE GENERATOR (OKAP) Grade 10 |
| **Essential Physical Requirements** | Ability to do repetitive tasks, lift 80 lbs., discriminate subtle differences in color and texture, withstand heat outside or in the greenhouse, and bend, stoop, or stand for long periods of time; display physical strength and stamina |
| **Number of Written Tests per Week** | 2 – 3 per week |
| **Daily Lecture Time** | 25 – 45 minutes daily |
| **Number of Performance Skills per Week** | 2-3 performance skills per week |
| **Work Qualities Assessed** | Safety rules, peer-worker relationships, initiative, dependability, and following directions |
| **Weekly Homework Assignments** | Plant identification, Terminology, Current unit topic |
| **Number and Name of Textbooks** | 1. Landscaping Principles & Practices 2. Art of Floral Design 3. Landscape Construction 4. Introduction to Horticulture |
| **Soft Skills** | Ability to multi-task, set priorities, and works well in teams; is **Self-motivated;** displays customer service skills |
| **Uniform Requirements** | 3 CPACTC T-shirts, steel-toed shoes, and jeans |
| **Required Expenditures** | See CPACTC website |
| **Cooperative Education Requirements** | Must meet the tasks per marking period requirement, maintain good attendance (95%), and be recommended by the teacher |
| **Clinical Experience, if any, Requirements** | None |
| **Articulation or Dual Enrollment Agreements** | Statewide and Local Articulation Agreement, see CPACTC website for details  Pennsylvania College of Technology – Horticulture 101 and 113 |
| **Student Credentials** | OSHA 10, Pennsylvania Certified Horticulturist, Pennsylvania Pesticide Certification, CPR/AED and First Aid |
| **NOCTI** | 3-hour timed test 171 item multiple choice test and timed performance assessment consisting of 5 jobs (2-hour time limit) evaluated by an industry expert |

**Horticulture and Landscaping**

**Math Application Sample Problems**

1. **Determine the amount of linear feet of edging is required for a garden bed.**

**Note:**

Circumference is 2

Short Radius is 3

Long Radius is 4

Use the following mathematical equation.

**Note: π = Pi (3.14)**

C = 2 π S2 + L2

\_

2

**Academic Standard:** Circumference of an ellipse to determine the amount of edging required for a bed.

**Solution:**

C = (2 x 3.14) S2 + L2 S = Short Radius

2 L = Long Radius

**=** 6.28 9 + 16

2

**=** 6.28 25 / 2

= 6.28 12.5 = (6.28) (3.54 LF) = 22.23 LF of edging required for bed

1. **Determine the number of hours required to install sod on a job.**

SY = SY (SY = Square Yards)

Hrs. x hrs

**Academic Standard:** CC 2.2 HS C.1 and CC 2.2 HS D.2

**Solution:**

400 SY = 280 SY 400x = (280)(8) x = 2,240 / 400

8 hrs. x hrs = 2,240

x = 5.6 hours required to install the sod

Logistics

&

Warehouse

Management



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| **Program Name** | **Logistics and Warehouse Management**  **CIP 52.0203** |
| **Minimum Attributes/**  **Prerequisites** | * Ability to work safely and independently with **tools and equipment** for periods of non-direct supervision * Ability to work productively and safely with **peers** for periods of non-direct supervision * Honesty and dependability * Ability to work as a member of a team |
| **Math Knowledge** | * Basic math operations * Measurement |
| **Reading Level: Textbook** | 8th grade reading level  Dale-Chall Readability Index: 8.18 Raw Score  MS Word and CBA RDNG PROBE GENERATOR (OKAP) Grade 8 |
| **Essential Physical Requirements** | Ability to stand for long periods of time, bend, stoop, **and lift 60 lbs.** |
| **Number of Written Tests per Week** | 1 per week |
| **Daily Lecture Time** | 30 minutes daily |
| **Number of Performance Skills per Week** | 2 – 3 performance skills per week |
| **Work Qualities Assessed** | Safety rules, following directions, initiative, dependability, and  customer service skills |
| **Weekly Homework Assignments** | 1 per week |
| **Number and Name of Textbooks** | Marketing Essentials |
| **Soft Skills** | Displays customer service skills, works well in teams, is reliable and **self-motivated,** and follow directions |
| **Uniform Requirements** | CPACTC Logistics T-shirt, leather steel-toe boots, and orange safety vest |
| **Required Expenditures** | See CPACTC website |
| **Cooperative Education Requirements** | Recommendation of the teacher |
| **Clinical Experience, if any, Requirements** | None |
| **Articulation or Dual Enrollment Agreements** | See CPACTC website for details |
| **Student Credentials** | OSHA 10, Certified Logistics Associate, NSC Forklift Operator; CPR/AED and First Aid |
| **NOCTI** | 3-hour, timed 157 item multiple choice test and timed performance assessment consisting of 5 jobs (3.75 hr. maximum) evaluated by expert industry partners that covers the full scope of the program curriculum |

**Logistics and Warehouse Management**

**Math Application Sample Problems**

1. **How many boxes are stacked on this pallet?**

**Note: Total Boxes = height view x top view**

**Academic Standard:** C.C.2.2.3.A.1

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**Side View**

**Top View**

**Solution:**

5 boxes on a layer

x 5 Layers

25 Boxes

**2. Shop brooms cost $8.00 each. If Tom bought 10 brooms with a 25% quantity discount, how much did he pay?**

**Academic Standard:** CC.2.1.7.D.1

**Solution:**

1. $8.00 cost per broom 2. $80.00 total cost 3. $80.00

x 10 quantity x .25 discount % - $20.00

$80.00 total cost $20.00 discount total $60.00 price of brooms

Masonry

A few men building a chimney

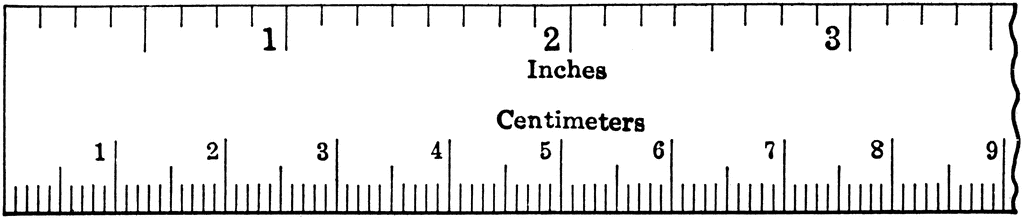
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| **Program Name** | **Masonry**  **CIP 46.0101** |
| **Minimum Attributes/**  **Prerequisites** | * Ability to work safely and independently with **tools and equipment** for periods of non-direct supervision * Ability to work productively and safely with **peers** for periods of non-direct supervision * Ability to work as a member of a team * Excellent eye-hand coordination * Ability to work outdoors and indoors in all weather conditions |
| **Math Knowledge** | * Basic math operations * Measurements * Fractions, decimals, & ratios * Basic applied geometry |
| **Reading Level: Textbook** | 10th grade reading level  Dale-Chall Readability Index: 11.28 Raw Score  MS Word and CBA RDNG PROBE GENERATOR (OKAP) Grade 10 |
| **Essential Physical Requirements** | Ability to do repetitive tasks, **lift 60 lbs.,** andstand, stoop, and bend for long periods of time; display physical strength and stamina |
| **Number of Written Tests per Week** | One (1) written assignment every two weeks |
| **Daily Lecture Time** | 15 minutes daily |
| **Number of Performance Skills per Week** | 2 – 3 performance skills per week |
| **Work Qualities Assessed** | Safety rules, peer-worker relationships, initiative, dependability, following directions, and completion of projects that are plumb, level and square |
| **Weekly Homework Assignments** | Practice layout of projects using tape rule |
| **Number and Name of Textbooks** | 1. Brick & Block Construction 2. Masonry Skills 5th Edition |
| **Soft Skills** | **Self-motivated,** works well in teams, problem solver, and dependable |
| **Uniform Requirements** | Jeans or suitable work pants (no holes), and leather safety-toe boots or shoes |
| **Required Expenditures** | Modular foot rule, 25 ft. Tape measure, see also: CPACTC website |
| **Cooperative Education Requirements** | Must meet the tasks per marking period requirement, maintain good attendance (95%), and be recommended by the teacher |
| **Clinical Experience, if any, Requirements** | None |
| **Articulation or Dual Enrollment Agreements** | State Articulation Agreement, see CPACTC website for details |
| **Student Credentials** | OSHA 10, Rough Terrain Forklift; Mobile Elevating Work Platform, PBA Certificate, CPR/AED and First Aid |
| **NOCTI** | 3-hours, timed 200 item multiple choice test and timed performance assessment consisting of 3 jobs (2.5 hour maximum) evaluated by expert industry partners that covers the full scope of the program curriculum |

**Masonry**

**Math Application Sample Problems**

1. **What does the ruler show in inches?**



**Academic Variable:** CC.2.4.HS.B.1, A1.2.2.1.2, A1.2.3.1.1, A1.2.3.2.1, A1.2.3.2.2, A1.2.3.2.3,

**Solution:** 1 7/8”

1. **What is the area of a brick patio 25’ long and 8’ wide?**

**Note: Area = length x width**

**Academic Standard:** CC.2.1.HS.F.2, A1.1.1.1.1, A1.1.1.1.2, A1.1.1.3.1, A1.1.1.2.

**Solution:**

Determine the area 25’ x 8’ = 200 Sq. Ft.

Welding



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| **Program Name** | **Welding**  **CIP 48.0508** |
| **Minimum Attributes/**  **Prerequisites** | * Ability to work safely and independently with **tools and equipment** for periods of non-direct supervision * Ability to work productively and safely with **peers** for periods of non-direct supervision * Excellent hand-eye coordination * Attention to details |
| **Math Knowledge** | * Blueprint reading * Basic math operations * Measurements * Fractions (need to be able to add and subtract fractions) * Decimals and ratios * Algebra and Trigonometry * Ability to measure within .001 tolerance |
| **Reading Level: Textbook** | 11th grade reading level  Dale-Chall Readability Index: 11.48 Raw Score  MS Word and CBA RDNG PROBE GENERATOR (OKAP) Grade 12 |
| **Essential Physical Requirements** | Ability to **lift 50 lbs.** and stand for long periods, have a steady hand, and work with small and large components, within small confines, and in a hot work environment |
| **Number of Written Tests per Week** | 1 test plus a written assignment |
| **Daily Lecture Time** | 15 minutes daily |
| **Number of Performance Skills per Week** | 1 performance skill per week |
| **Work Qualities Assessed** | Safety rules, following directions, initiative, and dependability |
| **Weekly Homework Assignments** | 0 – 1 per week |
| **Number and Name of Textbooks** | Welding Technology Fundamentals |
| **Soft Skills** | Ability to set priorities, is **self-motivated,** pays attention to fine details, and displays perseverance |
| **Uniform Requirements** | Welding gloves, welding helmet, welding jacket, welding pants, and leather steel- toed boots |
| **Required Expenditures** | See CPACTC website |
| **Cooperative Education Requirements** | Must meet the tasks per marking period requirement, maintain good attendance (95%) and be recommended by the teacher |
| **Clinical Experience, if any, Requirements** | None |
| **Articulation or Dual Enrollment Agreements** | Statewide Articulation Agreement, see CPACTC website for details  HACC WELD 102, 103, and 120 |
| **Student Credentials** | American Welding Society (AWS); JLG Rough Terrain Forklift, OSHA 10, CPR/AED and First Aid |
| **NOCTI** | 3-hour, timed 138 item multiple choice test and timed performance assessment consisting of 6 jobs (3 hour maximum) evaluated by expert partners that covers the full scope of the program curriculum |

**Welding**

**Math Application Sample Problems**

1. **Illustrate three ways to write ½ of an inch.**

**Academic Standard:** MB.1

**Solution:** 8/16, 4/8, .500, 1:2

1. **You need to cut a piece of metal to fit 2 projects. Calculate the difference between 5/8” and 3/8”. Reduce to the lowest common denominator.**

**Academic Standard:** MB.1

**Solution: 1/4"**

5/8 – 3/8 = 2/8

2/8 = 1/4

**CPACTC Contact Information**

To contact staff at CPACTC, dial the CPACTC General Phone number. Then dial the extension to speak to a specific person. If you know the party with whom you would like to speak, dial 9 for a directory by name.

CPACTC General Phone 717.697.0354

Assistant Principal 112

Attendance Office 106

Business Office …………………………………………………………………………………… 103

Cooperative Education Coordinator 109

Director’s Phone 105

Student Services Office 117

Assistant Principal of Student Services 179

School Counselor, Dave Payne 173

School Counselor, Lori Staub 158

JOC Secretary 104

Principal’s Office 106

Principal’s Phone 110

School Nurse 183

Technology Director 166