

December 6, 2021

Teri Gardner 12-6-2021

Washington State Apprenticeship & Training Council
Attn: Program Manager, Apprenticeship Section
PO Box 44530
Olympia, WA 98504

Dear Council Members,

Edmonds College is pleased to present this request for our Construction pre-Apprenticeship Program (CAP) to be recognized as a state-approved Apprenticeship Preparation Program. Edmonds College developed the pre-apprenticeship program in response to the significant labor shortage expected as Sound Transit expands light rail construction through Snohomish County and the lack of apprenticeship preparation programs available in the city of Lynnwood.

In 2019, Sound Transit conducted a risk assessment to determine the labor force needed to support the light rail expansion from 2019 through 2023. Data showed an overall shortage in King, Snohomish, and Pierce counties of 6.7% across five construction trades. More specifically, they found shortages in construction laborers (6.7%), equipment operators (5.5%), carpenters (6.4%), electricians (4.8%), and truck drivers (6.4%). Additionally, the risk assessment examined the supply gap anticipated across construction trades. Although a steady supply of workers is expected to enter the construction trades, it does not meet the growing demand. The analysis expects the supply of workers between 2019 - 2023 to reach 158,700, while the demand for those workers to be 168,600 with an additional 1,900 from upcoming Sound Transit projects. The space available at regional universities, colleges, and apprenticeship programs are not sufficient to fill the gap of 9,990 workers needed.

Based on this significant shortage and the lack of apprenticeship preparation programs in the Lynnwood and Edmonds area, Edmonds College and the City of Lynnwood partnered with Sound Transit to develop a 10-week apprenticeship preparation program. The program will be housed at the Advanced Manufacturing Skills Center at Edmonds College. Throughout the course, instruction blends hands-on experience with tools and equipment with classroom-style instruction. In addition, "soft skills" taught include diversity, equity, and inclusion; working with others; and money management. In addition, experienced instructors emphasize personal and workplace safety. CAP aligns with Edmonds College's mission and vision and will provide Snohomish county residents with a much-needed pathway into family-sustaining careers.

Edmonds College Overview

Edmonds College is a public college located in Lynnwood, Washington, serving approximately 17,000 students annually. Established in 1967, the college offers two applied baccalaureate degrees, 63 associate degrees, and 60 professional certificates. The college's mission is simply Teaching - Learning - Community. Edmonds College strives to transform lives through exemplary, nationally recognized educational and career pathways through academic excellence, student success, and community engagement.

The Edmonds College 2021-2022 Comprehensive Plan focuses on six goals: Access, Success, Community Engagement, Capacity and Operational Excellence, Entrepreneurial Hub, and Anytime, Anywhere Education. Concentrating on Community Engagement, the college developed strategies and action plans to accomplish this goal.

Strategy: Meet Employers and Community needs through Programs and Services

- Action: Develop a Pathway to Employment program. Partner with at least three employers to create pathway programs for student cohorts to pursue careers in their companies or industries.
- Action: Develop industry curriculum for Advanced Manufacturing Skills Center training: Maritime, AI/Robotics in Manufacturing, and Construction Trades.

CAP clearly aligns with this goal and the industry-driven curriculum at the Advanced Manufacturing Skills Center (AMSC). The AMSC is dedicated to offering short-term, non-traditional pathways that build the necessary workforce to help local companies thrive while providing students the chance to obtain a satisfying family-wage job in a growing and exciting industry.

Project Background

During the summer of 2020, Edmonds College President, Dr. Amit Singh, City of Lynnwood Mayor Nicola Smith, and Sound Transit started a conversation to explore the idea of creating jobs for unemployed adults who wish to enter the construction trades. Specifically, a risk assessment was conducted and reviewed for the Lynnwood to Everett light rail extension. The group identified and discussed an anticipated labor shortage, intending to find a solution.

Based on the initial conversation, a steering committee was formed to assist in curriculum development, entry qualifications, support services, recruitment, and retention. The steering committee consists of staff from the following areas:

Workforce Development Support

- Sound Transit
- City of Lynnwood

- Workforce Snohomish
- Economic Alliance of Snohomish County
- Snohomish STEM
- Community Transit

Education System Support

- Edmonds College
- Everett Community College
- Sno-Isle Skills Center
- State Board of Community and Technical Colleges

Community Support

- Latino Educational Training Institute (LETI)
- C3 Coalition of Communities of Color
- Housing Hope
- Refugee Immigrant Services NW

Labor Relations

- Local 292 - Laborers
- NW Carpenters Institute of Washington (NWCi)
- Operating Engineers Training Program
- Local 528 - Mason and Plasterers
- Local 699 - Sprinkler Fitters

The steering committee was instrumental in developing a well-rounded program with built-in support services, setting students up for a successful transition into the next step on their path to a rewarding career. Subcommittees were formed to focus on various project pieces, including curriculum development, marketing and recruiting, labor relations, recognition, and finance. Each subcommittee consisted of members of each area listed above, meeting regularly throughout development. The steering committee meets once a month to discuss progress, subcommittee work and updates, potential changes to the program, and potential pathways beyond pre-apprenticeship.

Program Overview:

The new pre-apprenticeship program is modeled after the existing state-recognized Construction Trades Apprenticeship Preparation (CTAP) program offered at Monroe Correctional Facility. The established curriculum was developed with significant input from industry experts and has experienced success in placing apprentices once completed. Following their lead, the steering committee reviewed and provided feedback on the curriculum. Suggested changes included the number of weeks, entry qualifications, and preferred qualifications. The college used the input, and developed CAP, a robust skills-based program preparing students to work in various construction trades.

CAP is a no-cost 10-week, 300-hour program that includes classroom lectures and hands-on experience. The technical skills portion of the program consists of math, blueprint reading and

drawing, health and safety, tool training, construction basic, basic electrical, and basic plumbing. In addition, students will demonstrate their physical ability and fitness throughout the program through activities such as using a wheelbarrow, building a sawhorse, and moving materials. The course will also cover work readiness, industry awareness, financial literacy (Seattle Credit Union), and diversity, equity, and inclusion (DEI). The college will work with the RISE Up (Respect, Inclusion, Safety, and Equity in the Construction Trades) to offer modules covering Implicit Bias, Emotional Intelligence, Coded Language, Diversity and Intersectionality, and Micro and Macro Aggressions. The RISE Up Campaign was created for the construction industry with input from the construction industry while being based on DEI best practices. The RISE Up Campaign and its components were developed in partnership with the City of Seattle and Sound Transit. DEI learning outcomes are implemented throughout CAP, preparing students for an inclusive workforce. Finally, students create a capstone project demonstrating the link between theory, practice, and skills acquired throughout the program.

The student's classroom experience is enhanced by inviting contractor and apprenticeship coordinators as guest speakers to inform students about construction trades and available apprenticeship opportunities. Contractors and apprenticeship coordinators are also invited to participate in mock interviews and graduation ceremonies. Detailed program outcomes, course descriptions, and course outcomes are included in the enclosure.

Eligibility and Application Process

The 10-week program is offered three times per year, with each cohort consisting of 15 to 20 students. The minimum qualification for prospective students is 18 years of age, with the preferred qualifications of a high school diploma, GED or equivalent, ability to pass a drugs test, and a valid driver's license. As COVID-19 restrictions continue to exist, students must attest to their vaccination status or show proof of exemption. In addition to the minimum and preferred qualifications, students are expected to:

- Be physically capable of doing the work
- Show up on time every day
- Respect and work well with others
- Be ready to learn
- Enjoy hands-on work
- Have reliable transportation

Students are asked to complete an application and interview with a retention specialist before being accepted into the program. The interview process is focused on helping students understand the program, qualifications, and expectations. This process also allows students to discuss possible support services needed to be successful.

Evaluation and Program Completion

Students will be evaluated using in-class assignments, building projects, skills proficiency, capstone project, quizzes, and final math test. A breakdown of grading can be found in the attached syllabus. A student must receive 70% to pass the course. The college will use the Badgr system to assign badges to students that pass the course. Students can display badges on various online sites to demonstrate skills gained through the completion of the course. Students that do not pass the course will work closely with the Retention Specialist to identify and remove barriers. The Retention Specialist will work with students unable to finish with their cohort to join a later cohort if interested.

Marketing and Recruitment

Community partners are essential for getting the word out about the program. Specifically, we work with Snohomish STEM, Latino Educational Training Institute (LETI), Community of Color Coalition (C3), Housing Hope, and the NW Immigrant Rights Project. As project stakeholders, who have a seat on the Steering Committee, participate in the marketing and recruitment subcommittee. The committee discussed best practices in recruitment focused on displaced workers, women, veterans, BIPOC, and LGBTQ+ communities.

The committee enlisted the expertise of the Edmonds College marketing department to implement and design several strategies, including print materials, social media language, and an information session slide deck. All materials were available to project stakeholders who connected with their respective clients about the program's benefits. In addition, the college advertised at the local WorkSource office, Sno-Isle Libraries, and local food banks. Prospective students are directed to a live person to walk through the program and application process. The program was able to secure additional support from LETI for prospective Spanish speakers. A LETI navigator was trained on the application process and can assist students from application to registration.

Additionally, two community partners, LETI and C3, were able to tour the training site. These partners have been essential in the recruitment process by providing prospective student referrals. Each agency acts as the initial contact to present the program to interested clients. Having a detailed knowledge of the program and support services allows prospective students to understand what is expected before starting the program. Staff at each agency can then provide a warm hand-off to the CAP intake staff and program navigator.

Support Services and Program Navigation

As mentioned previously, several support services are provided to assist students from day one. A retention specialist offers individualized support for each student in the program. There is a close connection between the instructor and retention specialist to identify and refer struggling students to appropriate services quickly. As Edmonds College students, campus support services are available free of charge. Students can access:

- Child Care Assistance through Workforce Funding
- Food Pantry
- Emergency Funds to cover unexpected expenses
- Counseling and Resource Center
- Education including HS Diploma or GED, Basic Education, and English Language Acquisition
- Licensing/Relicensing
- Union initiation fees
- Additional support services will be provided as needed.

The college has also partnered with the Workforce Innovation and Opportunity Act through the Workforce Snohomish Office to provide eligible students with additional career counseling and job search assistance.

Beyond Pre-Apprenticeship

Each student will work closely with the instructor to determine what apprenticeship they would like to pursue, keeping in mind their interests, abilities, skills, and knowledge. Students are provided a visual aid to help identify possible pathways and entry requirements for each. The infographic is easy to read and allows students to see all the options on one page.

The college has identified registered apprenticeship opportunities that provide a solid pathway for graduates. In addition, articulation agreements have been established to provide direct or preferred entry into various construction trades.

Potential Career Pathways include:

- Construction Industry Training Council (direct entry)
 - Carpentry
 - Electrical
 - Heavy Equipment Operators
 - HVAC
 - Laborers
 - Painting
 - Plumbing
 - Scaffold Erector
 - Sheet Metal
- Local 86 (letter of support)
 - Iron Workers

Additionally, Edmonds College continues to build relationships and connections with registered apprenticeship programs to provide graduates with as many opportunities as possible. At the

time of writing, the following registered apprenticeship programs have been contacted for further discussion:

- NW Laborers District Council
- Northwest Carpenters Institute of Washington
- LiUNA! Local 292
 - Laborers
- Local 26
 - Pipefitters
- Local 528
 - Cement Masons and Plasterers
- Local 699 (considered for direct entry upon receiving recognition)
 - Sprinkler Fitter

Finally, upon completing the pre-apprenticeship program and moving into a registered apprenticeship, each student is presented with a graduation gift to get them started in their apprenticeship. The gifts are individualized based on their chosen path, including a toolbelt, steel toe boots, and essential tools for their new career.

Conclusion

Thank you for taking the time to review the Edmonds College Construction pre-Apprenticeship Program application. We appreciate your consideration and look forward to hearing from you. If you have any questions or concerns, please feel free to contact us using the information below.

Sincerely,



Dr. Amit Singh
President
Edmonds College

Enclosures:
Articulation Agreements and Letters of Support
Construction pre-Apprenticeship Course Syllabus and Curriculum
Potential Pathways Infographic
Construction pre-Apprenticeship Marketing Materials

Teri Gardner 12-6-2021

Apprenticeship Articulation Agreements/ Letters of Support



October 29, 2021

Re: Letter of Support for Edmonds College Construction Trades Pre-Apprenticeship Application

Dear WSATC Board Members and Pre-Apprenticeship Application Reviewers:

Please accept this letter as proof of our support for the Edmonds College Construction Trades Pre-Apprenticeship Program application as a state-recognized pre-apprenticeship program.

We applaud Edmonds College's efforts to develop a program focused on helping men and women of color a pathway into an occupation providing a livable family-sustaining wage. In addition, the partnership between Edmonds College, Sound Transit, and the City of Lynnwood addresses the construction trades employment shortage in Snohomish County.

Our apprenticeship program is well-matched for Edmonds College Construction Trades Pre-Apprenticeship graduates, and we feel their wrap-around services can ensure the success of graduates while preparing them to successfully complete an apprenticeship program. We appreciate the opportunity to participate on the steering committee, which allowed us to provide guidance and feedback on curriculum, support services, and the various opportunities for graduates. Our intent is to offer direct entry to Edmonds College Construction Trades Pre-Apprenticeship program graduates into any one of our 11 state registered apprenticeship programs.

We support the proposal submitted by Edmonds College without reservation and look forward to our continued partnership in the years to come. Please do not hesitate to contact us should you have any questions or concerns.

Sincerely,

Halene Sigmund, president
Construction Industry Training Council of WA

Cc: file



PACIFIC NORTHWEST IRONWORKERS AND EMPLOYERS APPRENTICESHIP & TRAINING TRUST

Date: 11/2/2021

Dear WSATC Board Members and Pre-Apprenticeship Application Reviewers,

Please accept this letter from Ironworkers Local 86 Apprenticeship as record of our support for the Edmonds College Construction Trades Pre-Apprenticeship Program application as a state-recognized pre-apprenticeship program.

We applaud Edmonds College's efforts to develop a program focused on helping men and women of color a pathway into an occupation providing a livable family-sustaining wage. In addition, the partnership between Edmonds College, Sound Transit, and the City of Lynnwood addresses the construction trades employment shortage in Snohomish County.

Our apprenticeship program is well-matched for Edmonds College Construction Trades Pre-Apprenticeship graduates and we feel their wrap-around services can ensure the success of graduates while preparing them to successfully complete an apprenticeship program. We recently participated in a site visit, which allowed us to provide guidance and feedback on curriculum, support services, and the various opportunities for graduates. During the visit, we were also able to talk with the students about opportunities beyond the pre-apprenticeship program. We are interested in furthering the relationship of support between our apprenticeship program and Edmonds College pre-apprenticeship program.

We support the proposal submitted by Edmonds College without reservation and look forward to our continued partnership in the years to come. Please do not hesitate to contact us should you have any questions or concerns.

Sincerely,

Jack Laher, Coordinator
Pacific Northwest Ironworkers &
Employers Joint Apprenticeship
Training Committee #86

JL/jm
opeiu8

Teri Gardner 12-6-2021

Construction pre-Apprenticeship Program Syllabus and Curriculum

Construction pre-Apprenticeship Program (CAP)

Student Syllabus

Program Overview

Course Title: Construction pre-Apprenticeship Program

Quarter:

Course Dates:

Course Schedule: M-F 7:30am - 2:00pm

Hours: 300

Instructor: Teresa Farrell

Course Description: The program includes math, blueprint reading and drawing, health and safety, work readiness, industry awareness, tool training, construction basic, basic electrical, and basic plumbing. Students will also create a capstone project demonstrating the link between theory and practice and skills acquired throughout the program.

Outcomes: Upon successful completion, students will be able to:

- Communicate and collaborate with teams to promote worksite safety.
- Use appropriate techniques to solve problems and to operate and maintain most construction trade tools safely and correctly.
- Demonstrate effective workforce skills and knowledge needed to obtain entry-level trade jobs.
- Demonstrate skills and knowledge needed for entry into apprenticeship and/or further training.

Required Modules:

- Module 1: Construction Trades Math
- Module 2: Worksite Behaviors, Readiness and Safety
- Module 3: Basic Tools, Basic Construction, Basic Blueprints
- Module 4: Construction Trades Industry Awareness
- Module 5: Capstone Project

Qualifications: 18 years or older

Preferred Qualifications: Driver's License, HS Diploma, GED, or equivalent, Clean drug test

Required Textbooks:

- **MODERN CARPENTRY**, Twelfth Edition by Willis H. Wagner, Howard Bud Smith, Mark W. Huth: An easy-to-understand source on building materials, tools, and construction

methods. It provides detailed coverage of all aspects of light construction. The text also familiarizes you with other aspects of the building trades with chapters on plumbing, electrical, and HVAC. ISBN-13: 978-1631260834

- **MATH FOR THE TRADES** by United Brotherhood of Carpenters: A manual is a basic treatment of trade math beginning with general math, fractions, and decimals. Measurement and measurement tools, layout, area measure, and volume measure are all explained in detail with numerous exercises.
- **ONE TRADE, MANY CAREERS** by United Brotherhood of Carpenters: Covers self-evaluation; goal setting; employability skills; specific career information on those trades within the UBC; real-world-of-work descriptions of workers on the job; interviews and features that appeal to young adults.

Course Structure

Morning/Classroom: This time is allotted for related topic discussions, lectures, weekly book assignments, student assessments, and classroom projects.

Afternoon/Shop: This time is shared between students and the instructor. Class learning emerges from what students bring to the shop (their knowledge, experiences, effort, motivation) making the connections from the classroom to the job site **AND** what is to be expected to perform the work. This includes applying learned mathematical applications to shop projects.

Expectations for Students

1. **Participate.** Discussions and teamwork are critical parts of this course. You can learn a great deal from discussing ideas and perspectives with other students and your instructor. I encourage you to collaborate with other students on homework assignments, especially in math. Participation can also help you articulate your thoughts and develop critical thinking skills. To do this, you must be prepared; so be sure to complete all reading and other assignments according to the schedules. The class activities have been carefully designed to help you achieve the learning objectives for the course.
2. **Manage your time.** Make time in your week for homework. Give yourself plenty of time to complete assignments.
3. **Do not fall behind:** Class assignments move at a quick pace and each week builds on the previous. Ask for help if needed. If you are struggling with a course concept, reach out to me, and other students, for support.
4. **Respect:** Students in this class are encouraged to speak up and participate during class meetings. Because the class will represent a diversity of individual beliefs, backgrounds, and experiences, every member of this class must show respect for every other member of this class. Professional behavior is the standard of the class.

Homework

- **Weekly assignments will be expected to be completed and turned in by the following Monday of each week unless authorized by the instructor.**

Weekly Math Quizzes: There will be a total of 9 quizzes. Each quiz will cover the previous week's self-check assignment. **The purpose of the quizzes is to prepare you for the final math exam.**

Capstone and/or Team Project: The pre-approved project will integrate the skills and abilities acquired during the program and demonstrate competencies learned.







Final Math Exam Math for the Trades (Chapters 1-7)

Tools needed: Math Book, Study Materials, and Construction Calculator

Grading Criteria - must receive a 70% to pass and receive a badge

Assignment	Percentage %
Classroom Assignments	30%
Weekly Math Quizzes	15%
Participation/Engagement	15%
Capstone & Team Projects	20%
Final Math Exam	20%
Total	100%

The following table lists are acceptable for each type of graded assignments.

	 OPEN NOTES	 USE BOOK	 SEARCH ONLINE	 ASK FRIENDS	 WORK IN GROUPS
Classroom & Homework Assignments	✓	✓		✓	✓
Math Quizzes	✓	✓			
Capstone & Team Projects	✓	✓		✓	✓
Final Math Exam	✓	✓			

Academic Integrity

Edmonds College values all students and their unique abilities and skills. In order to promote brilliance in all students, Edmonds College expects students to contribute their own original works and submissions. Academic integrity (responsible and honest scholarship) benefits everyone in our community. It not only helps you reach the real goal of this class (learning) but also allows for the program to be perceived positively by others.

Academic Integrity means:

- Do your own work. All of your assignments are your own.
- Recognize others with citations. If you use someone else's words or images, use their name as well.
- Ask questions if you don't understand.
- Commit to a growth mindset; expect challenges and work to overcome them.
- Allow enough time to learn.

No matter what your background, you will be part of Edmonds College's supportive learning community culture, where you will be personally recognized as an adult learner with unlimited potential.

Edmonds College students shall demonstrate Academic Integrity. Instructors are expected to report all violations of Academic Integrity (cheating and plagiarism) to the College. The College's database of such incidents will be monitored by the Office of the Vice President for Student Services. Data will be maintained for three years. Evidence of repeat incidents will result in additional action by the Office of the Vice President for Student Services as governed by the Student Code of Conduct.

Diversity and Inclusion Statement

It is my intent that students from all backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength, and benefit. I intend to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, religion, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups.

College Policies and Guidelines

- **Non-Discrimination Statement:** Edmonds College does not discriminate on the basis of race; color; religion; national origin; sex; disability; sexual orientation; age; citizenship, marital, or veteran status; or genetic information in its programs and activities.
- The last day to drop this course without a class without a transcript entry is July 19, 2021.

- Institutional and Instructor Withdrawal Policies - Withdrawing from class is the process of formally dropping a class or classes after the quarter has started.
 - The college may withdraw a student from a class or classes if the student has been suspended for poor conduct or a lack of academic achievement, or if a student has not paid tuition. Tuition refunds may not be provided for institutional withdrawals.
- **Accommodations for Religion/Conscience:** Students who will be absent from course activities due to reasons of faith or conscience may seek reasonable accommodations so that grades are not impacted.

In Closing

This syllabus is intended to give students guidance in what may be covered during the term and will be followed as closely as possible. However, the instructor may choose to modify, supplement, and make changes to the course in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.

Course Schedule and Assignments

Week 1 Math for the Trades - Chapter 1 General Math Self- Checks 1-10 (pg.6-26) Section 4 -Worksheet 4 & 2 (pg. 44) Modern Carpentry (Chapter 1 - The Carpenters Workplace) Read and Answer Chapter Review Questions
Week 2 Math for the Trades - Chapter 2 Fractions Self-Checks 1-7 (pg. 51-64) Section 1- Worksheet 2 (pg. 95) In-class Exercise Section 2 Worksheet 3 (pg. 101) In-class Exercise Modern Carpentry (Chapter 3- Building Materials) Read and Answer Chapter Review Questions
Week 3 Math for the Trades – Continue Chapter 2 Math Fractions Self- Checks 8-15 (pg.65 -88) Worksheet 2 & 3 – Section 5 Scale Drawing (pg.111 - 113) Shop - Framing Square Exercise Modern Carpentry Chapter 4 (Hand Tools) - Chapter 5 (Power Tools) Read and Answer Chapter Review Questions
Week 4 Math for the Trades - Chapter 3 Math Decimals Self- Checks 1-9 (pg.126-154) Section 4 Worksheet 1- (Pg. 163) Modern Carpentry Chapter 6 (Scaffolds, Ladders, and Rigging) Read and Answer Chapter Review Questions
Week 5 Math for the Trades – Chapter 3 Math Measurement and Measurement Tools Self- Checks 1-9 (pg.174-200) Section 3 -Worksheet 1 & 2 (pg.207-210) Modern Carpentry Chapter 7 (Plans, Specifications, and Codes) Read and Answer Chapter Review Questions
Week 6 Math for the Trades - Chapter 5 Math Layout Self- Checks 1-7 (pg. 220-240) Section 1 Worksheets 1 (Shop) Pg. 244 Section 1 Worksheets 3 (Shop) Pg. 250 Section 2 Worksheet 1 (Pg. 267)

Section 3 Worksheet 1 (Pg.273)

Modern Carpentry Chapter 8 & 9 (Building Layout) - (Footings and Foundations)

Read and Answer Chapter Review Questions

Week 7

Math for the Trades - Chapter 6 Math/Area Measure

Self- Checks 1-4 (Pg.286 -297)

Section 2 Worksheet 1(Pg. 312) Instructor will assign a blueprint for this task

Section 2 Worksheet 2 (Pg. 313) Instructor will assign a blueprint for this task

Modern Carpentry Chapter 10 & 11 (Floor Framing) - (Wall and Ceiling Framing)

Read and Answer Chapter Review Questions

Week 8

Math for the Trades – Continue Chapter 6 Math/Area Measure

Self- Checks 5-8 (Pg. 300 -308)

Section 5 Worksheet 1(Pg. 319) See Instructor for Details

Section 5 Worksheet 2 (Pg. 321) See Instructor for Details

Modern Carpentry Chapter 12 (Roof Framing) Read and Answer Chapter Review Questions

Week 9

Math for the Trades - Chapter 7 Math/Volume Measure

Self – Checks 1-4 (Pg.327-335)

Modern Carpentry Chapter 13 (Electrical Wiring and Plumbing Systems) Read and Answer Chapter Review Questions

Week 10

Exam Week (Final Math Test)

Exam Details Math for the Trades (Chapters 1-7)

Total Questions on Test 130

Deadline: This is an open book test and in-class only. Students will be allotted the full week to complete it. The instructor will collect the student's exam at the end of each day until completed. No completed or uncompleted exam is to leave the classroom.

Allowed References Math Book, Study Materials and Construction Calculator

Exam Overview

True/False, Multiple Choice, Complete Each Statement, Round Specified Place Value, Reduce to Lowest Term, Calculate, Ratios and Equal Proportions, Add, Subtraction, Multiplication, Division, Radius, Circumference, Diameter, Volume, Write Equation and Solve

The Capstone and Blueprint project is to be completed. All Classroom Assignments and Homework are now Due.

Construction pre-Apprenticeship Program Curriculum

Module 1: Construction Trades Math

Course Description: This course will provide students with a solid foundation in mathematical principles needed for a variety of vocational trades. Trades included but were not limited to, Laborers, Ironworkers, Carpenters, Cement Masons, Electricians, Finish Trades, and Pipe Trades. Students will practice the application of the principles in the shop through a variety of apprenticeship preparation activities and tasks.

Course-level Learning Objectives (CLOs)

- Exhibit knowledge of adding and subtracting construction fractions.
- Exhibit knowledge of percentages.
- Exhibit knowledge of decimals.
- Exhibit knowledge of measuring techniques.
- Exhibit knowledge of volume calculations.
- Exhibit knowledge of lineal and board footage.
- Exhibit knowledge of rise, run, and diagonal.
- Exhibit knowledge of material and cost calculations.
- Exhibit the ability to measure accurately (24 accurate measurements in two minutes).
- Demonstrate comprehension of construction math, measuring, and calculation of materials and cost by passing a comprehensive test with a score of 70% or better.
- Use measuring devices correctly to obtain an accurate measurement.

Module 2: Worksite Behavior, Readiness, and Safety

Course Description: This course will provide instruction in worksite behaviors and expectations: preparing for the workday, communications skills, teamwork skills, proactive attitude, attendance expectations, integrity, resume writing, mock job interview, appropriate work attire, and what employers are really looking for when hiring. To include, but not limited to, behaviors and actions that could disqualify, lead to disciplinary actions, or even terminate an individual from a job. Also to be included are health and safety needed for the trades. Topics include physical fitness, healthy eating habits, worksite assessment, identifying workplace hazards, hazard prevention, and DOC safety training. Proper use and fit of personal protective equipment will be discussed.

Course-level Learning Objectives (CLOs)

- Explain how to meet the physical requirement needed to enter the construction industry and/or apprenticeships
- Participate in outdoor physical agility stations, including measuring stations, handling construction materials, building small structures, and maneuvering a wheelbarrow.
- Develop sufficient endurance and stamina to enter an apprenticeship program

- Apply proper techniques for safe handling, and movement of building materials and equipment
- Apply elements of hazard prevention
- Use personal protective equipment
- Model appropriate worksite behaviors and expectations
- Prepare for the workday
- Document jobsite activities to employer verbally and in writing by the use of industry-standard work records
- Apply teamwork techniques to a construction project
- Demonstrate punctuality and jobsite readiness
- Write a resume for a job in the construction industry
- Demonstrate interview techniques
- Diversity, Equity and Inclusion Training Modules (<https://riseup4equity.org/>)
 - Implicit Bias
 - Coded Language
 - Emotional Intelligence
 - Diversity and Intersectionality
 - Micro and Macro Aggressions

Module 3: Basic Tools, Basic Construction, Basic Blueprints

Course Description: This course focuses on the identification, maintenance, and safe usage of tools and equipment used in the trades. Students will understand the importance of job safety and requirements. Tool and job safety will be taught and practiced throughout the entire program. This course will also provide exposure to construction basics via skill-building activities and trades-related agility courses.

Course-level Learning Objectives (CLOs)

- Differentiate tools and equipment used in various construction trades, including laborer's, carpentry, masonry, ironworking
- Demonstrate use of tools safely to industry standards site-specific
- Prepare tool belt for the workday
- Identify and interpret the signs and symbols on construction blueprints
- Draw a basic construction blueprint incorporating appropriate signs and symbols
- Successfully complete agility stations and/or courses site-specific
- Model appropriate worksite behaviors and expectations

Module 4: Construction Trades Industry Awareness

Course Description: This course provides exposure to a variety of different trades virtually and via guest speakers. Included in the class are guest speakers from different trades who will inform students of what it takes to be successful in their respective trades. In addition, students will participate in worksite visits with local construction trades contractors. Students are provided with physical requirements needed, application requirements, wages, benefits, job opportunities, and anything else that is pertinent in that trade. Students will also be exposed to the Mentorship

Matters Program (<https://constructioncenterofexcellence.com/training/mentorship-matters>).

This program is comprised of two key components:

- Mentorship workshops offer specialized training for skilled workers and apprentices on the principles and behaviors required to be good mentors or mentees.
- On-the-job tools ensure those learned mentoring behaviors 'stick' on the job.

Course-level Learning Objectives (CLOs)

Upon successful completion of this course, students will be able to:

- Explain a variety of apprenticeship programs available in Washington state.
- Develop the physical requirements needed to enter the construction industry and/or apprenticeship.
- Financial literacy and personal budgeting in the trades (Seattle Credit Union).
- Describe application requirements, wages, benefits, and job opportunities available in a variety of trade unions.
- Comprehend appropriate worksite behaviors and expectations.

Module 5: Capstone Project

Course Description: In this capstone course, students will experience the link between theory and practicum through completing a relevant project. This project will integrate the skills and abilities acquired during the program and demonstrate the competencies learned.

Course-level Learning Objectives (CLOs)

- Construct a building project utilizing safety standards and proper equipment from blueprint drawing to completion.
- Compose a portfolio of materials needed to enter construction apprenticeship program or employment
- Resume, Industry- Related Work, Other Classes & Accomplishments, Pictures/Capstone & Shop Projects, and CTAP Graduate Resources

Teri Gardner 12-6-2021


Potential Pathways Infographic


ENGLISH
PROFICIENCY


VALID DRIVERS
LICENSE


HS DIPLOMA
OR GED


CLEAN DRUG
TEST


PHYSICAL
EXAM


SS CARD OR I-9
VERIFICATION


READY TO WORK

Local 292:
Laborers

☐
☐
☐
☐
☐
☐

Jesse Littlefox
360-620-8745

Local 699:
Sprinkler Fitters

☐
☐
☐
☐
☐
☐

Steve Miller
206-450-5655

Local 86:
Iron Workers

☐
☐
☐
☐
☐
☐

Bryan Johnson
206-473-2994

Local 528:
Mason & Plasters

☐
☐
☐
☐
☐
☐


Mike Raymond
206-762-9286


ENGLISH
PROFICIENCY


VALID DRIVERS
LICENSE


HS DIPLOMA
OR GED


CLEAN DRUG
TEST


PHYSICAL
EXAM


SS CARD OR I-9
VERIFICATION


READY TO WORK

Carpentry
CITC

☐
☐
☐
☐
☐
☐

Adriana Gamboa
425-285-2325

Electrical: Commercial
Inside Wireman
CITC

☐
☐
☐
☐
☐
☐

Adriana Gamboa
425-285-2325

Electrical: Residential
Wireman
CITC

☐
☐
☐
☐
☐
☐

Adriana Gamboa
425-285-2325

Electrical: Low
Energy/Sound & Comm
CITC

☐
☐
☐
☐
☐
☐

Adriana Gamboa
425-285-2325



ENGLISH
PROFICIENCY




VALID DRIVERS
LICENSE



HS DIPLOMA
OR GED



CLEAN DRUG
TEST



PHYSICAL
EXAM



SS CARD OR I-9
VERIFICATION



READY TO WORK

Heavy Equipment
Operators (HEO)
CITC

☐
☐
☐
☐
☐
☐

Adriana Gamboa
425-285-2325

HVAC
CITC

☐
☐
☐
☐
☐
☐

Adriana Gamboa
425-285-2325

Constructin Craft
Laborers
CITC

☐
☐
☐
☐
☐
☐

Adriana Gamboa
425-285-2325

Painters
CITC

☐
☐
☐
☐
☐
☐

Adriana Gamboa
425-285-2325



ENGLISH
PROFICIENCY




VALID DRIVERS
LICENSE



HS DIPLOMA
OR GED



CLEAN DRUG
TEST



PHYSICAL
EXAM



SS CARD OR I-9
VERIFICATION



READY TO WORK

Plumbers
CITC

☐
☐
☐
☐
☐
☐

Adriana Gamboa
425-285-2325

Scaffold Erectors
CITC

☐
☐
☐
☐
☐
☐

Adriana Gamboa
425-285-2325

Sheet Metal
CITC

☐
☐
☐
☐
☐
☐

Adriana Gamboa
425-285-2325

Local 26:
Pipefitters

☐
☐
☐
☐
☐
☐

Ryan Santeford
360-486-9442

Construction Pre-Apprenticeship Program Marketing Materials

WHAT ARE YOU CAPABLE OF?

CONSTRUCTION TRADES
PRE-APPRENTICESHIP PROGRAM





WHAT ARE YOU CAPABLE OF?

CONSTRUCTION TRADES PRE-APPRENTICESHIP PROGRAM



WHAT ARE YOU CAPABLE OF?

CONSTRUCTION TRADES
PRE-APPRENTICESHIP PROGRAM



WHAT ARE YOU CAPABLE OF?

**CONSTRUCTION TRADES
PRE-APPRENTICESHIP PROGRAM**

CAP Information Session



AMSC CONSTRUCTION TRADES PRE-APPRENTICESHIP PROGRAM

A partnership between Edmonds College, Sound Transit, City of Lynnwood, and others



WHAT ARE YOU
CAPABLE OF?



what is an **APPRENTICESHIP?**

Apprenticeship is an a combination of **on-the-job training (OJT)** and related **classroom instruction** under the supervision of a journey-level craft person or trade professional in which workers **learn the practical and theoretical aspects of a highly skilled occupation.**

EARN while you LEARN!

(Apprentices can earn \$19 - \$30 hourly plus benefits.)



APPRENTICESHIP programs

- Carpentry - \$27 - \$45
- Electrical - \$18-\$46
- Cement Masons - \$26 - \$44
- Iron Workers - \$25 - \$42
- Sheet Metal / HVAC - \$25 - \$56
- Laborers - \$23 - \$38
- Teamsters - \$27 - \$39
- ...hourly wage plus included benefits
- ... *and many other career options to explore!*



Think about an occupation that makes the most of your special talents, and find out if there's an apprenticeship program in that occupation

To See a list of active state-registered Apprenticeship Programs and Standards visit www.lni.wa.gov

what is **PRE-APPRENTICESHIP?**



A supportive, hands-on program designed to help you **improve your basic skills** before applying to an apprenticeship program.

program **OVERVIEW**

10 WEEK PROGRAM

- **Basics of Construction**
- **Basic Plumbing Techniques**
- **Blueprint Reading and Drawing**
- **Introduction to Electrical**
- **Tool Identification**
- **Trades-Level Math**
- **Worksite Behavior, Readiness and Safety**
- **Employment Skills**
 - *Resumes*
 - *Interview Techniques*
- **Life Skills**
 - *Communication*
 - *Teamwork*
 - *Fitness*
- **Learn about the various apprenticeship trades and the benefits offered.**

minimum **QUALIFICATIONS**

18+ *years of age*

Preferred Qualifications:

- HS Diploma or GED
- Driver's License
- Ability to pass a drug test



A top-down photograph of various construction tools resting on a light-colored wooden plank surface. In the upper left, there is a yellow spirit level with a black base and a circular bubble level. Next to it are two rolled-up white sheets of paper, possibly blueprints, with some technical drawings visible. To the right, a portion of a bright yellow hard hat is visible. The background is a solid green vertical bar on the left side of the image.

the need to **SUCCEED**

- Be **PHYSICALLY CAPABLE** to do the work
- **SHOW UP ON TIME** every day
- Respect and **WORK WELL WITH OTHERS**

- Be **READY TO LEARN**
- **ENJOY** hands-on work
- Have **RELIABLE TRANSPORTATION**

Program **COMPLETION**

Graduates of this program will receive:

- Mentorship
- Support services



RESOURCES and SUPPORT

- Washington 211 - [Home - WA 2-1-1](#)
- Volunteers of America - [Volunteers of America Western Washington](#)
- Housing Hope - [How to get help | housinghope](#)
- Snohomish County Energy Assistance - [Energy Assistance](#)
- Workforce Snohomish Utility Assistance Program - [Utility Assistance Program](#)
- Edmonds College Student Wellness Guide - [Student Wellness Guide](#)

WHAT ARE YOU CAPABLE OF?



program begins **OCTOBER 4**

7:30 a.m.-2 p.m. Monday- Friday | October 4-December 17, 2021

Held at the Advanced Manufacturing Skills Center - AMSC

Located on Paine Field | 3008 100th St. SW | Everett, WA



CONTACT US

Edmonds College

Advanced Manufacturing Skills Center - AMSC

CONSTRUCTION TRADES PRE-APPRENTICESHIP PROGRAM

For more information or to apply, contact:

Shelia Dersham | shelia.dersham@edmonds.edu | 425.267.5777

Para atención in español, llame:

Rene Acevedo | rene@letiwa.org | 360.399.6541

edmonds.edu/STapprenticeship