



WELDING TECHNICIAN CAREER LAUNCH PROGRAM PROPOSAL

Clark College & Madden Fabrication Partnership

Partners

Clark College

Madden Fabrication

Program Checklist

P1. Program description including length of program in years and total hours (including split between classroom and worksite).

Program Description:

Welding Technology combines the technical knowledge and artistry of joining metals. The Welding Technology program at Clark College provides course work to meet the industry needs of today. With updated equipment found in real-world shops, students will learn to read blueprints, analyze parts, and carry out proper fitting, welding, and inspection using a variety of materials such as steel, stainless steel, aluminum, and titanium. Coursework pairs welding with fabrication skills, processes, and techniques for students to be competitive in the workplace. The partnership between Clark College and Madden Fabrication provides students a cooperative work experience with Madden Fabrication provides experience working with carbon steel, stainless steel, aluminum, nickel alloys, as well as some exotic metals. This includes structural steel fabrication, pipe spool manufacturing, storage tank, and pressure vessel fabrication and repair. The two-year program leads to an Associate's Degree and employment throughout the program and upon graduation. Participants are employees of Madden Fabrication and students at Clark College in the Welding Program at the same time.

Length of Program: 8 quarters, 24 months.

Total Hours: 1,453 Hours.

P2. Estimated number of hours per week at worksite and in classroom (this approach may shift throughout the program).

Hours per week at worksite: 40 hours.

Hours per week in classroom: 1.65 hours in classroom; 3.3 hours in structured lab environment.

P3. Demonstration of labor market demand for specified skills/career in local region

The Welding Technician Career Launch Program addresses the occupations within Welders, Cutters, Solderers, and Brazers occupation (51-4121).

Within Clark College's three county service district (Clark, Skamania, and Klickitat counties), there were 683 jobs in 2020, which is anticipated to grow by 8.2% in the next 10 years. Historically, the average number of completions are not keeping up with the demand, with only 60 total annual completions, for 80 annual openings. Even amidst the COVID-19 pandemic, January 2020 – Mar 2021 showed 50 monthly unique job postings for Welding Technicians – indicating a significant competition for high-quality applicants to meet industry demands.

Clark College is located within the Portland-Hillsboro-Vancouver metropolitan area, which means that the economic region includes a broader six county region (Clark, Skamania, Klickitat, Multnomah, Washington and Clackamas). Within this economic region, there were 3,425 jobs in 2020. There were 355 annual openings, with only 312 annual completions (among all degree types) in this broader region; this creates an annual workforce shortage of 43.

Therefore, the Welding Technician Career Launch Program creates intentional career pathways for new and incumbent workers to address this workforce shortage.

P4. Projected count of student enrollment, student completion, and anticipated employer participation for 5 years, post-pilot.

| | Baseline (2020-2021) | Year 1 (2021-2022) | Year 2 (2022-2023) | Year 3 (2023-2024) | Year 4 (2024-2025) | Year 5 (2025-2026) |
|--|--------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| Student Headcount | 74 | 80 | 85 | 90 | 95 | 100 |
| Full-Time Equivalent Student (FTES) | 41 | 43 | 45 | 48 | 50 | 53 |
| Completions | 16 | 18 | 20 | 22 | 24 | 25 |
| Employer Participation | 1 | 1 | 1 | 2 | 3 | 3 |

With this partnership, in Year 1, 1-2 Welding Technology students will participate in the Career Launch partnership at Clark College, with additional cohorts added each year, depending on employer demand and capacity. To expand opportunities for Welding students, Clark will work to identify additional employer partners that can maximize student participation in the paid employment opportunity.

P5. Concise description of development process to create the Career Launch program (e.g., who was involved, when, how was the program piloted, etc.)

Clark College has had a long history of supporting the technical trades since it was established in 1933. From humble beginnings of teaching purely manual welding processes to the semi-automatic and fully automated weld processes found today in industry.

The welding department underwent a complete revamp of the curriculum in 2015 to update to standards and technology currently found in industry. Working with input from industry, we added fabrication theory and projects, Pressbrake operation, CNC Plasma Cutting, Lean Manufacturing, quality control and testing techniques as well aligning the curriculum and procedures with the American Welding Society’s (AWS) codes.

In 2016 the welding department became a Qualified Welder Testing Agency for the Washington Associate of Building Officials (WABO). This allows us to prepare current students as well as incumbent workers to earn weld certifications that are required to work at any construction site in Washington State. This certification is also recognized in Oregon and Idaho. In 2019, Clark College became an Accredited Testing Facility (ATF) through the American Welding Society, providing testing site for certified welders. The ATF designation is specific to AWS and the certifications are recognized nationally and have been recognized internationally as well. In 2020 the welding department has purchased and installed a robotic weld cell. We are using this as a precursor to the advanced manufacturing center we have funding to build. Phase II of this project will be earning the Accredited Testing Center (ATC) through the American Welding Society. Once this designation is achieved, we will be able to offer Certified Robotic Arc Welding (CRAW) certifications. In 2021, Clark College has partnered with Vigor Shipyards to provide custom training for their work force. Initially the training will consist of a Pipe Welding & Fabrication class. Later training will be expanded to an Aluminum Welding & Fabrication class.

Clark College Welding Department has worked with Madden Industrial for a number of years. We have partnered with them to provide custom training to serve under represented and rehabilitated students to learn marketable skills in the welding and fabrication industry.

P6. Signed letter of endorsement from all relevant partners, stakeholders and regional networks (including employers, labor organizations, academic institutions, community-based organizations, individuals, and other relevant stakeholders in support of the proposed Career Launch program). Regional network endorsement preferred.

Letters enclosed on subsequent pages are from the following partners:

- Clark College
- Educational Service District 112 (Regional Network)
- Career Connect SW

Madden Fabrication endorsement of the Career Launch Program are included in Employer Commitment Letters for I-R9 on Page 13.



April 26, 2021

To the Career Launch Endorsement Review Team:

I write this letter to affirm Clark College's institutional commitment to the Welding Technician Career Launch Program, with the initial partnership with Madden Fabrication. This program provides students with industry-defined curriculum and meaningful, high-quality on-the-job experience during their educational experience.

I am proud to say that this program also supports Clark College's strategic plan in the core themes of academic excellence, social equity and economic vitality as well as the values of social justice, partnerships, and innovation. The Welding Technician Career Launch Program exemplifies this commitment through implementation of this creative and agile strategy to enhance student learning, and alignment of the Welding Program to meet regional workforce needs.

The Welding Technician Career Launch Program is applying for endorsement between Clark College and Madden Fabrication. Students concurrently enroll in the Clark College Welding Program and work at Madden Fabrication. To ensure that all students have the resources to address academic and non-academic issues, Clark College provides dedicated wrap-around student support to meet their individualized needs. This comprehensive program, with intentional integration of course curriculum and work-based learning opportunities to successfully enter the workforce with the knowledge, skills and abilities to be successful as a welding technician.

Building on the intensive industry collaboration with Madden Fabrication, the partnership between Clark College and Madden Fabrication will provide additional career pathways for students to support local industry. Upon endorsement, all levels of leadership here at Clark College are confident that the implementation will continue to support the region's need for welding technicians well into the future.

Sincerely,

A handwritten signature in black ink, appearing to read "Karin Edwards".

Dr. Karin Edwards
President
Clark College



EDUCATIONAL SERVICE DISTRICT 112

COUNTIES

CLARK
COWLITZ
KLICKITAT
PACIFIC
SKAMANIA
WAHKIAKUM

To the Career Launch Endorsement Review Team:

ESD 112 is excited to support the Welding Technician Career Launch Project, with collaboration between Clark College and Madden Fabrication.

At ESD 112, we recognize the need for

- Private/public partnerships that provide students with a career pathways that also provide competitive candidates to meet our business needs
- Meaningful, high-quality on-the-job experience, with defined competencies and skills gained through experience.
- Curriculum developed in partnership with employers and industry, to ensure state-of-the-art curriculum is aligned with occupations in-demand.
- Dedicated wrap-around student support to ensure students have the resources to be successful in academic and non-academic issues.
- Alignment of pathways from K-12 through postsecondary education and career trajectory.
- Career pathways for incumbent workers to upskill for career trajectory.

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TIM MERLINO

The Welding Technician Career Launch Project is an exemplary program, providing students with meaningful, high-quality on-the-job experience that is concurrent with aligned academic curriculum.

On behalf of ESD 112, we commit to working with the Welding Technician Career Launch Project to make this program successful in the following specific ways:

- Convene and support Career Connect Intermediaries and other local partners in the region
- Help them achieve their outcomes related to Career Launch endorsement and participation of young people in Career Launch activities
- Ensure equitable inclusion of youth of color, low income youth, youth from rural communities and youth with disabilities.

The impact of this program is vital to meeting our regional workforce needs and we support endorsement of this exemplary program.

Tim Merlino

Superintendent



360-952-3494 | tim.merlino@esd112.org
2500 NE 65th Avenue | Vancouver | WA | 98661



To the Career Launch Endorsement Review Team:

The Career Connect Southwest Network is excited to support the Welding Technician Career Launch Project, with partnership between Clark College and Madden Fabrication.

At Career Connect SW, we recognize the need for:

- Private/public partnerships that provide students with a career pathways that also provide competitive candidates to meet our business needs
- Meaningful, high-quality on-the-job experience, with defined competencies and skills gained through experience.
- Curriculum developed in partnership with employers and industry, to ensure state-of-the-art curriculum is aligned with occupations in-demand.
- Dedicated wrap-around student support to ensure students have the resources to be successful in academic and non-academic issues.
- Alignment of pathways from K-12 through postsecondary education and career trajectory.
- Career pathways for incumbent workers to upskill for career trajectory.

The Welding Technician Career Launch Project is an exemplary program, providing students with meaningful, high-quality on-the-job experience that is concurrent with aligned academic curriculum.

On behalf of Career Connect SW, we commit to working with the Welding Technician Career Launch Project to make this program successful in the following specific ways:

- Support to analyze labor market
- Develop K-16 guided pathway aligned to jobs
- Recruiting and engaging private and public sector organizations
- Raise students' awareness of different career options
- Ensure equitable inclusion of youth of color, low income youth, youth from rural communities and youth with disabilities.

The impact of this program is vital to meeting our regional workforce needs and we support endorsement of this exemplary program.

Vicki Hrdina

Vicki Hrdina

Director of Career Readiness & STEM Initiatives
Teaching and Learning

P7. Description of resources, supports, or other processes to recruit and support students from underserved backgrounds; or create an implementation plan to do so.

With potential program expansion, the program will intentionally recruit students from underserved backgrounds with specific support from ESD 112 (Career Launch Regional Network), Workforce Southwest Washington (Career Launch Program Intermediary), as well as the NEXT Center (a comprehensive center serving young adults ages 16-24 that do not have a clear pathway to work, training or post-secondary education). These intentional partnerships aim to recruit participants that reflect the diversity in the community.

Once students enroll in the program, Clark College offers a variety of supports to assist students from marginalized populations in achieving their educational and professional goals – including the following:

- Appreciative Advising Model that supports students in a holistic manner. All new students are assigned an Academic Advisor who assists with academic and non-academic supports throughout their journey at Clark College.
- Workforce Education Services provides a variety of supports to assist low-income students to include, alternative financial aid, access to subsidized childcare, maintenance of public benefits while in school, emergency grants, and assistance in preventing homelessness. Students receive assistance in barrier removal and connections to internal and external resources.
- Disability Support Services (DSS) office assist students with disabilities in pursuing their educational goals. Clark College is committed to assuring that its services, programs, and activities are accessible to individuals with disabilities.
- The Office of Diversity and Equity is committed to serving marginalized populations. The Diversity Center, is a safe space for students to study, meet new people and experience a sense of belonging.
- The Penguin Pantry supports a healthy college community by reducing hunger on campus and connecting students to essential resources.
- Career Services provides a wide array of resources that can assist students with job search skills and securing full-time employment and internships. There are a variety of Student Success Workshops that are offered throughout the academic year to assist students with their professional development, academic success and personal development.

Industry-Related Checklist

I-R1. Address of worksite(s) where Career Launch students will complete supervised training.

Madden Fabrication
2550 NW 25th Place
Portland OR 97210

I-R2. Hourly wage for Career Launch participants.

Participants start at \$18/hour. This usually includes increase pay rates as skills advance.

I-R3. List of entry-level positions and associated job descriptions for which a Career Launch student would be eligible for upon completion.

Welder

Responsibilities:

- Welding stainless steel with flux core
- Fit and fabricate, or learn to.
- Fit, assemble, bolt together, components of a single occupant outdoor bathroom.
- Work on other shop projects as assigned.

Qualifications:

- 1+ year of MIG welding experience (school or employment).
- Knowledge of blueprints.
- Ability to read a tape measure and other layout tools proficiently.
- Reliable transportation.
- Pass a drug screen.
- Must be willing to be clean shaven for a respirator fit test.

Shop Helper

Responsibilities:

- Shipping and receiving functions for the yard and office.
- Operating forklifts to move materials.
- Organizing shop and materials.
- Provide support in other areas as needed.

Qualifications:

- Must be able to pass a UA drug screen.
- Shipping and receiving skills are a huge plus.
- Forklift operation experience.
- Should be eager to learn new skills to grow and expand within the company.
- Must be able to work independently.
- Must be very punctual.

I-R4. List of specific skills and competencies required for completion of Career Launch program, with demonstrated alignment to entry-level positions, job descriptions, and average local salary ranges.

Specific skills and competencies for the Career Launch program are aligned with American Welding Society (AWS) standards, which are the professional standards for all certifications and entry-level positions:

| AWS Standard Code | Standard Description | Welding Program Courses Aligned with Standard |
|----------------------------------|---|--|
| D1.1 Structural Welding Steel | This code covers the welding requirements for any type of welded structure made from the commonly used carbon and low-alloy constructional steels. Design, procedures, qualifications, fabrication, inspection, and repair of steel structures made of tubes, plate, and structural shapes that are subject to either static or cyclic loading. | WELD 140, WELD 141, WELD 142, WELD 143, WELD 144, WELD 145, WELD 240, WELD 241, WELD 242, WELD 243, WELD 244, WELD 255 |
| D1.2 Structural Welding Aluminum | This code covers the welding requirements for any type structure made from aluminum structural alloys, except for aluminum pressure vessels and pressure piping. Design, procedures, qualifications, fabrication, inspection, and repair of any type of welded aluminum alloy structure, including provisions applying exclusively to nontubular statically loaded structures, nontubular dynamically loaded structures, or tubular structures. | WELD 240, WELD 241, WELD 242, WELD 243, WELD 244, WELD 245 |
| D1.6 Structural Welding S.S. | This code covers the requirements for welding stainless steel structural assemblies. Fabrication, assembly, and erection of welded structures and weldments subject to design stress where at least one of the materials being joined is stainless steel. | WELD 144, WELD 145, WELD 240, WELD 241, WELD 242, WELD 243, WELD 244, WELD 255 |

For the aligned positions, the entry-level hourly wage (10th percentile for occupation) is \$16.21 for the Clark, Skamania, and Klickitat counties region. The wage progression includes \$18.34 (25th percentile) and \$22.15 (median hourly wage).

I-R5. Employer attests that Career Launch program is in compliance with required federal, state, and local regulations.

Attestation is included in Madden Fabrication Employer Letter (See I-R9, page 13).

I-R6. Employers will outline a student supervision and mentorship model.

Employer agrees to provide exemplary supervision of participating student employees:

1. Provide job orientation concerning metals fabrication facility procedures during scheduled work hours.
2. Provide training, guidance and supervision of the intern/extern.
3. Assign sufficient quality work (based on technical evaluation areas) to occupy the intern during scheduled hours.
4. Accurately complete time sheets and list accomplishments of the intern/extern on a regular basis.
5. Adhere to all health and safety codes.
6. Evaluate the intern's/extern's progress at appropriate points during his or her work-based learning/externship.

I-R7. Description of common career pathway(s) beginning with entry-level position specified with demonstration of likely salary growth over specified time period.



For students interested in pursuing a management position (e.g., Service Manager), Clark College offers a Bachelor of Applied Science in Applied Management degree. This degree builds on the Associate of Applied Technology (AAT) degree to provide the managerial knowledge and expertise to meet industry demand. This includes, but is not limited to the following: Foundations of Management; Social Media in Business; Organizational Communication; Organizational Behavior; Business Principles; and Accounting Principles for Managers.

I-R8. Demonstrated competency alignment with relevant professional standards for specified entry-level positions when applicable.

Professional standards for Welding Technicians is based on the American Welding Society (AWS) Certified Welder Program. The Certified Welder (CW) program tests welders to procedures used in the structural steel, petroleum pipelines, sheet metal, and chemical refinery welding industries. There is a provision to test to a company-supplied or non-code welding specification. Tests for Certified Welder (CW) are performed at AWS Accredited Testing Facilities located throughout the world. Clark College is a certified testing site, which supports access for regional community as well as student access to testing facilities.

The primary standards for Certified Welder include:

- Certified Welder D1.1 Structural Welding Steel. This code covers the welding requirements for any type of welded structure made from the commonly used carbon and low-alloy constructional steels. Design, procedures, qualifications, fabrication, inspection, and repair of steel structures made of tubes, plate, and structural shapes that are subject to either static or cyclic loading.
- D1.2 Structural Welding Aluminum. This code covers the welding requirements for any type structure made from aluminum structural alloys, except for aluminum pressure vessels and pressure piping. Design, procedures, qualifications, fabrication, inspection, and repair of any type of welded aluminum alloy structure, including provisions applying exclusively to nontubular statically loaded structures, nontubular dynamically loaded structures, or tubular structures.
- D1.6 Structural Welding S.S. This code covers the requirements for welding stainless steel structural assemblies. Fabrication, assembly, and erection of welded structures and weldments subject to design stress where at least one of the materials being joined is stainless steel.

For each of these standards, competencies for the Certified Welder Program include:

- Ability to follow AWS Standard Welding Procedures (SWPSs)
- Able to pass visual inspection
- Able to pass applicable testing methods (destructive, non-destructive, radiographic, x-ray, etc.)

I-R9. Signed letter from employer partner.

Displayed on Page 13.



MADDEN

INDUSTRIAL CRAFTSMEN

To the Career Launch Endorsement Review Team:

Madden Fabrication is pleased to collaborate with Clark College and its Welding Technology program to join as an employer partner in the Welding Technician Career Launch Program. This partnership between Clark College and Madden Fabrication will provide students with meaningful, high-quality on-the-job experience that is concurrent with aligned academic curriculum.

Located in Portland, Oregon, Madden Fabrication is a metals fabrication facility serving the industrial, commercial and residential construction industries. Like other employers in the region, we find it challenging to find employees with the education, skills, and abilities needed to grow our company. We believe that this Welding Technician Career Launch partnership will produce an additional workforce with needed skills and hands-on experiences.

Within the endorsed program, Madden Fabrication commits to partnering in the Welding Technician Career Launch Program to make this program successful in the following specific ways:

- Compliance with required federal, state, and local regulations for the Welding Technician Career Launch Program;
- Recruitment of students into the program through community partnerships with K-12, Clark College, and community-based organizations;
- Provide exemplary student supervision and mentorship that allows program participants to gain confidence and skills needed to successfully transition into the workforce;
- Completers of the program will have the knowledge, skills, and abilities for the Welding Technician;
- Consider using the program as an option to skill up our own employees; and
- Provide program participants with the career advancement opportunities, as applicable.

Regional industry needs employees with fundamental welding technician competencies. We stand as a partner with Clark College to expand the best Welding Technician Career Launch Program that will fully support industry and future workforce needs. This program clearly supports our mission, too. By helping to provide students with the knowledge and exposure to industry needs and an early awareness of educational and career pathways, support of this Career Launch program offers Madden Fabrication an opportunity to identify high-quality potential graduates with work-ready welding technician skills.

Sincerely,

Kelsey Scotch
Madden Industrial Craftsmen, Inc.
1800 NW 169th Place, Suite A200
Beaverton, OR 97006

Madden Industrial Craftsmen Incorporated

1800 NW 169th Place ζ Suite A-200 ζ Beaverton, Oregon 97006 ζ Tel: (503) 690-0641 ζ Fax: (503) 690-9815

Academic-Related Checklist

A-R1. List of academic institution(s) providing career-aligned instruction for Career Launch program.

Clark College

A-R2. Curriculum scope and sequence aligned to skills and competencies provided in employment checklist.

Program outcomes are overarching skills that are emphasized and reinforced throughout several courses in a specific program; they are measurable statements that define what students should know or be able to do by the end of a certificate or degree at Clark College. After successful completion of this program, students will be able to:

- Recognize and respond to emergencies effectively. Assess a victim(s) condition and determine proper care. Administer rescue breathing and CPR to adults. Identify injury prevention strategies. Assess a victim(s) condition and preform appropriate first aid. Determine the appropriate and proper response to situational questions and select the best answer.
- Demonstrate the ability to safely use all metal working shop equipment and perform safety inspections of said equipment.
- Demonstrate the ability to successfully weld and understand the processes and equipment used in manual and semi-automatic welding.
- Demonstrate proficiency with basic shop drawings through assessments and sketching exercises. Identify and explain multi-view drawings, drawing line conventions, title blocks, bill of materials, dimensions and tolerances. Demonstrate the use and interpretation of welding symbols under AWS A2.4 standards, as they pertain to weld joint geometry.
- Identify and describe Welding Technology principles of operation, terms and safe practices related to GMAW welding and cutting processes. Understand and explain the use of GMAW electrodes. Describe the functions of GMAW power sources, electrical parameters, output characteristics and auxiliary controls. Describe the criteria for visual inspection of GMAW weldments. Describe OFC and PAC principles of operation.
- Identify and describe Welding Technology principles of operation, terms and safe practices related to GMAW welding and cutting processes. Understand and explain the use of common hand tools. Apply GMAW in the assembly of layout projects. Describe the criteria for visual inspection of GMAW weldments. Apply OFC and PAC principles of operation to layout projects.
- Identify and describe Welding Technology principles of operation, terms and safe practices related to FCAW welding and cutting processes. Understand and explain the use of FCAW electrodes. Describe the functions of FCAW power sources, electrical parameters, output characteristics and auxiliary controls. Describe the criteria for visual inspection of FCAW weldments. Describe OFC, PAC and CAG-A principles of operation.
- Identify and describe Welding Technology principles of operation, terms and safe practices related to OFC, CAC-A and SMAW welding and cutting processes. Understand and explain the use of SMAW electrodes. Describe the functions of SMAW power sources, electrical parameters, output characteristics and auxiliary controls. Describe the criteria for visual inspection of SMAW weldments. Describe OFC and CAC-A principles of operation.
- Obtain or work towards AWS certifications in multiple process. Enhance skills in FCAW, SMAW, GTAW, GMAW, SAW, PAC and Oxy/fuel cutting processes.
- Identify and use Welding Technology principles of operation, terms and safe practices related to OFC, PAW and GTAW welding and cutting processes. Understand and explain the use of GTAW electrodes. Describe the functions of GTAW power sources, electrical parameters, output characteristics and auxiliary controls. Describe the criteria for visual inspection of GTAW

weldments. Identify, select and proper use of layout tools.

- Identify and describe Welding Technology principles of operation, terms and safe practices related to FCAW & GMAW welding and cutting processes. Understand and explain the use of specialty wire feed equipment. Apply FCAW/GMAW in out of position welding. Describe the criteria for visual inspection of FCAW/GMAW weldments. Apply OFC and PAC principles of operation to weld assignments.
- Identify and use Welding Technology principles of operation, terms and safe practices related to GMAW, FCAW, SAW welding, and OFC & PAC cutting processes. Understand and explain the use of wire electrodes in fabrication. Describe the functions of wire feed power sources, electrical parameters, output characteristics and auxiliary controls. Describe the criteria for visual inspection of wire feed weldments. Identify, select and proper use of layout tools.
- Identify and describe Welding Technology principles of operation, terms and safe practices related to GTAW welding and cutting processes. Understand and explain the use of GTAW electrodes. Describe the functions of GTAW power sources, electrical parameters, output characteristics and auxiliary controls. Describe the criteria for visual inspection of GTAW weldments. Describe PAW and PAC principles of operation.
- Recognize the many types of metals and their use. Write and speak clearly about the characteristics of metals. Define and use metallurgical terminology on tests, for written and/or oral reports and during individual and group presentations. Analyze lab results and understand their close relationship to everyday living. Apply metallurgical knowledge to welding and machining metals as-well-as other trade uses. Assess the value of metals in everyday use.

Welding Technology Course Sequence, Endorsed by Advisory Committee

General Education Requirements

| | |
|-----------------------------|---|
| <i>Communication Skills</i> | 5 |
| <i>Computational Skills</i> | 5 |
| <i>Human Relations</i> | 5 |

Major Area Requirements

| | | |
|--------------------------|---------------------------------------|---|
| HLTH 120 | Adult CPR And First Aid | 1 |
| WELD 102 | Introduction To Welding | 6 |
| WELD 110 | Welding Blueprint Reading | 5 |
| WELD 140 | Gas Metal Arc Welding | 6 |
| WELD 141 | Gas Metal Arc Fabrication | 6 |
| WELD 142 | Flux Core Arc Welding | 6 |
| WELD 143 | Flux Core Arc Fabrication | 6 |
| WELD 144 | Shielded Metal Arc Welding | 6 |
| WELD 145 | Shielded Metal Arc Fabrication | 6 |
| WELD 156 | Welding Certification | 2 |
| WELD 200 | Applied Material Science | 5 |
| WELD 240 | Gas Tungsten Arc Welding | 6 |
| WELD 241 | Gas Metal Arc Fabrication | 6 |
| WELD 242 | Advanced Wire Feed Welding | 6 |
| WELD 243 | Advanced Wire Feed Fabrication | 6 |
| WELD 244 | Advanced Gas Tungsten Arc Welding | 6 |
| WELD 245 | Advanced Gas Tungsten Arc Fabrication | 6 |

Total Credits/Units **106**

Welding does not have a required course associated with the welding cooperative work experience. This partnership is modeled after the Mechatronics / SEH America program, in which students are hired as employees with the industry partner – and continue with the integrated employment throughout their education pathway. Therefore, connection and coordination between employer and program faculty are conducted outside the formal course-based approach.

A-R3. Demonstration of student supports (e.g. mentoring, advising, financial aid, tutoring) available for Career Launch students enrolled in the course.

There are a number of supports available to Career Launch students to assist them in achieving academic success at Clark College:

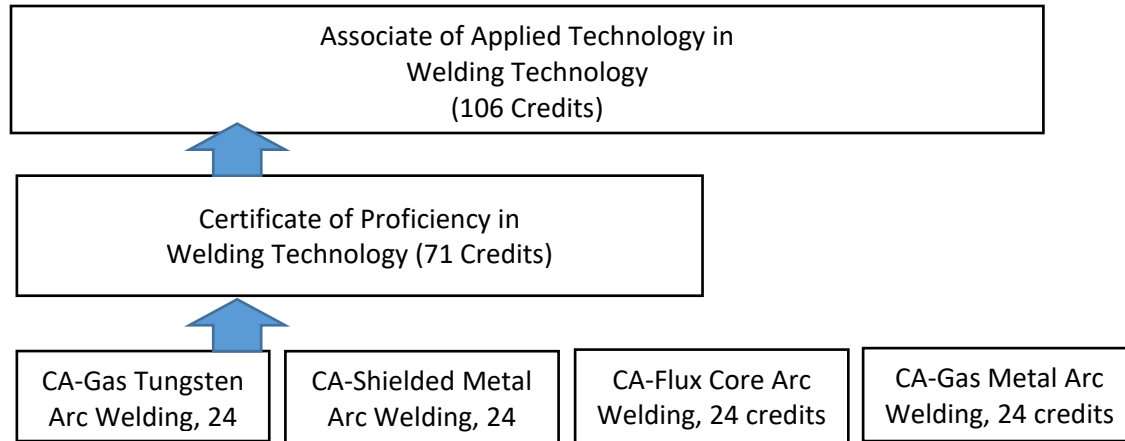
- Clark College has implemented the Appreciative Advising Model that supports students in a holistic manner. This is an intentional collaborative practice of asking positive, open-ended questions that help students optimize their education experiences and achieve their dreams, goals, and potentials. All new students are assigned an Academic Advisor who assists with academic and non-academic supports throughout their journey at Clark College.
- Peer Mentors Clark College Peer Mentor Programs provide an opportunity for students to help others connect to Clark College and community resources, navigate the college, and work toward academic goals.
- Student Success Programs offers a variety of supports to students to include: strategies for balancing classes, work and personal responsibilities, access to college and community resources, assistance with developing and achieving academic goals, and one-on-one support from the Clark College Student Success Coach.
- Tutoring Services is designed to provide individualized attention that facilitates student learning and academic success. Tutors will help students develop skills and confidence to become a stronger, more independent learner. Students who come in for tutoring may also access computers, software, handouts, reference materials, and other resources.
- Financial Aid is available to provide students with a variety of funding supports to help cover the cost of education expenses to include tuition, fees, books and supplies. The Financial Aid Office is available to assist students in understanding financial aid options, to include student loans, grants, work study and scholarships.

A-R4. Number of postsecondary credits provided and / or credential earned upon completion of program.

Upon completion of the Associate of Applied Technology (AAT) Welding Technology degree, students will have earned two stackable academic postsecondary credentials:

- Certificate of Proficiency, 71 credits
- Associate of Applied Technology, 106 credits
- CA-Gas Tungsten Arc Welding, 24 credits
- CA-Shielded Metal Arc Welding, 24 credits
- CA-Flux Core Arc Welding, 24 credits
- CA-Gas Metal Arc Welding, 24 credits

A-R5. Demonstrated curricular alignment with relevant professional and / or academic standards associated with coursework and credential, when applicable.



Upon completion of the Associate of Applied Technology (AAT) Welding Technology degree, students will have completed 15 credits of General Education Requirements, as required by accreditation through the Northwest Commission on Colleges and Universities (NWCCU):

- 5 credits of Technical Writing,
- 5 credits of Technical Math, and
- 5 credits of Human Relations.

In addition, students complete 90 credits of Welding theory and lab skill development. As part of the degree pathway students master the skills for the American Welding Society (AWS) Certified Welder Program. The Certified Welder (CW) program tests welders to procedures used in the structural steel, petroleum pipelines, sheet metal, and chemical refinery welding industries. There is a provision to test to a company-supplied or non-code welding specification. Tests for Certified Welder (CW) are performed at AWS Accredited Testing Facilities located throughout the world. Clark College is an Accredited Testing Facility, which supports access for regional community as well as student access to testing facilities.

Certifications that a welder can obtain through the Certified Welder program include:

- SMAW Tack Welder
- GMAW Tack Welder
- FCAW Welder
- GMAW Welder
- SMAW Welder
- SMAW Plate
- GMAW Plate
- FCAW Plate
- GTAW Plate
- GTAW Pipe (Carbon Steel)
- GTAW Pipe (Stainless Steel to Carbon Steel)
- GTAW Pipe (Stainless Steel)
- GTAW/SMAW Pipe (Carbon Steel)
- GTAW/SMAW Pipe (Chrome PWHT)

A-R6. Details of potential for current or future partnerships and/or scalability of the program within and across sectors and/or geographic locations (e.g. articulation, degree pathways), when applicable.

Once endorsed, this program plans to expand capacity with additional employer partnerships – particularly if expanded capacity (e.g., space and resources) were available. Clark College is willing share lessons learned and partnership structure to other community colleges in the state interested in offering this program.