

# Career Launch Endorsement Review (CLER) Application



*WVC –BAS-ET CLER application*

INSTITUTION: Wenatchee Valley College

PROPOSED PROGRAM: Baccalaureate of Applied Science-Engineering Technology (BAS-ET)

PROGRAM CIP: CIP – 15.0805

PROGRAM EPC (Legacy): AAS-T – 603 (cip-15.0000)

PLAN CODE (PeopleSoft)\_\_\_\_\_

NAICS Code: 541330

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*Applications reviewed monthly and are due the first business day of the month.*

Electronic submissions only to [scopeland@sbctc.edu](mailto:scopeland@sbctc.edu)

## **Program Introduction**

Wenatchee Valley College (WVC) began offering the Baccalaureate of Applied Science in Engineering Technology (BAS-ET) degree in 2017 after two years of program development. Program development involved consultation with regional industry partners and neighboring higher education partners as well as employer surveys. The college determined that adding a Baccalaureate in Applied Science in Engineering Technology (BAS--ET) was essential to serve the educational and workforce needs of the surrounding rural areas. For example, the technological increase in mechanization of agriculture from the field to the processing lines is significant and will only continue to grow. The local PUDs (Chelan, Douglas, Okanogan, Grant) who have hydropower, fish hatcheries, and distribution systems all need engineers and engineering technicians to run and operate their facilities. Low cost energy has also attracted new industry to the area, such as data centers, block chain, etc. and these companies need employees with training in electrical systems integration. Local manufacturing companies, hospitals, and schools also need employees skilled in mechatronics to assist with building operations, energy efficiency improvements, and maintenance.

## **Program Checklist**

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

The need for hands-on engineering technologists is rapidly growing, and many industrial partners are interested in an educated workforce that not only can communicate well, but also have the knowledge, skills and ability to use critical thinking in solving problems. The WVC Baccalaureate of Applied Science Engineering Technology (BAS-ET) degree was designed to serve the educational and workforce needs of the region. The new program is for two groups of students:

- Those who have completed a related associate applied sciences transfer (AAS-T) degree (such as the associate of technical science in industrial technology or engineering technology)
- Those who have completed an associate of arts and sciences-direct transfer agreement (AAS-DTA).

Students are officially enrolled in the BAS-ET career launch program once they have completed a 2-year degree. The BAS-ET degree focuses on electronics and mechatronics, which is comprised of engineering, including mechanical, electrical, telecommunications, control and computer engineering. The program coursework includes general education requirements and provides students with a foundation in physics, chemistry and math.

Through a combination of face-to-face, hybrid and online classes, this full-time program takes traditional students four years to earn the BAS-ET degree. Students who have earned an associate degree can complete the BAS-ET in two to three years, depending on coursework previously taken.

Graduates of four-year engineering technology programs may seek employment as entry-level electrical or electronics engineers, engineering technologists, or applied engineers.

WVC worked with employees in education and the engineering industry to design the BAS-ET curriculum, including representatives from Chelan and Douglas County PUD, Wenatchee High School (feeder school and employer), Pacific Aerospace and Electronics, Emerson Process Management, Keyes Fibre Packaging, Van Doren Sales, Stemilt Fruit Growers, Central Washington University, City of Wenatchee, Alcoa, Greater Wenatchee Area Technology Alliance and the Educational Services District.

Table 1 summarizes the length of the program in years and total hours.

Postsecondary Credential	Years	Credits	Classroom hours	Work-based learning hours
AAS-T or AAS-DTA	2 years	110 credits	1100	0
BAS-ET	2 years	95 credits	1225	400
Total	4 years	205 credits	1325	400

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

Students enrolled in the BAS-ET program must complete a 400-hour internship while enrolled in a course called Cooperative Work Experience. This course and internship may be completed during the last year of course work or it may be completed during the summer term immediately preceding or following the last year of course work. Most students elect to complete the 400-hour internship during the summer and they work 40 hours per week for 10 weeks. If students complete the internship during the school year, they may work fewer hours per week and spread that out over a longer time period.

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

According to the Washington State Employment Security Department, the job outlook for electrical and electronics engineering technicians is anticipated to grow 0.6% between 2017-2027. It is estimated that there are 2,370 jobs in this field in Washington state with an average of 682 openings per year.

Locally, there are utility districts, manufacturing companies, data centers, agricultural food processing facilities, schools, and hospitals looking to hire employees with skills in electrical systems integration. Industry outreach summarized in Table 2 (included at the end of the text) documents over 20 local employers that represent these industry sectors; this table is not representative of all possible employers in the area. The employers listed in Table 2 (plus others not listed) have a demand for local employees with skills to design, repair, maintain, and upgrade electrical and mechanical systems. Job listings were obtained from several of these employers to further describe the skills and career opportunities for BAS-ET program graduates in the area (See Section IR-3 below).

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

Enrollment and Completion

The BAS-ET program was first offered in Fall term 2017 and eight students enrolled in the program. The first two students graduated in Spring 2020 and several others are anticipated to graduate this Spring 2021. Program enrollment is anticipated to increase over time through the implementation of the enrollment strategy that was developed as part of this career launch planning grant.

Table 3 outlines the actual and anticipated student enrollment, completion, and employer participation from Spring 2020 graduates and participation for the next five years.

<b>Engineering Technology</b>	Spring 2020	Spring 2021	Spring 2022	Spring 2023	Spring 2024
Headcount Enrolled Actual and (Anticipated)	8	(10)	(12)	(14)	(16)
Student Completion Actual and (Anticipated)	2	(4)	(5)	(6)	(7)
Employer Participation	1	4	5	6	7

Employer Participation

For the first year of program graduates, Chelan PUD hired one student as a paid intern. Chelan PUD hires 15-20 student interns each year and they have committed to hire at least one student per year from the BAS-ET program.

For graduates in Spring 2020, WVC has identified 13 local paid internship opportunities for students (Table 2 included at the end of the narrative). Three of these are new partnerships developed as part of this career launch planning grant: Confluence Health, Lamb Weston, and Washington State University. Five letters of support from employers willing to offer internships for WVC students are attached. WVC is committed to helping students find paid work opportunities to satisfy their internship requirement as part of the BAS-ET degree program.

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

The BAS-ET program development was a two-year process that involved consultation with regional industry partners, neighboring higher education partners, and employer surveys. As a result, the college determined that adding this program was essential to serve the educational and workforce needs of the region. WVC prepared a Statement of Need which was sent to the SBCTC in July 2015 and this document described the regional work force and demands for graduates skilled in electronics and mechatronics, including mechanical, electrical, telecommunications, control and computer engineering. The college was granted permission to proceed with program development and sought input from industry and WVC faculty to develop the program curriculum. The BAS-ET program proposal was sent to the SBCTC in early 2016 and the program was approved for offering in Fall 2017.

The decision to pursue the Career Launch endorsement was made after the Dean of Workforce Education, Dean of Allied Health and Nursing, and the Dean of Liberal Arts and Sciences all attended the Career Launch webinar held on 10/14/19 via Zoom. Following this zoom meeting, the Dean of Workforce Education met with the Vice President of Instruction, Director of Workforce Grants, BAS-Engineering Technology faculty, Automotive Technology faculty, and Career Services personnel. All entities were in agreement that seeking a Career Launch program endorsement for the BAS-ET program would help build connections between the college and the community to ensure that the curriculum offered helps prepare students for local jobs. This work is consistent with the WVC Strategic Plan goal to provide greater internship and job shadowing opportunities for students in the community. Thus, WVC applied for intermediary grant funds to expand or scale this existing program to demonstrate that it meets the Career Launch criteria.

The process to expand or scale this existing program started with building a stakeholder working group and interviewing WVC staff and faculty, industry members, educators, and community members about local engineering jobs and the skills needed for entry level employment and internships as an engineering technologist. Through these interviews, it became apparent that there are local internships and entry level positions that the BAS-ET students are well qualified for and the community was interested in building working relationships with WVC. Several industry members expressed interest in participation in the Advisory Committee and student mentoring. Table 2 (included at the end of the narrative) was developed as a result of the industry outreach efforts. This Career Launch endorsement will allow the BAS-ET program to build stronger ties between graduates and the work force which will build the program reputation and expand program capacity.

In addition, WVC has worked diligently alongside the North Central Career Connect Washington Network Executive Leadership for the past year to ensure that this program is aligned with their efforts and prioritizes equity in opportunity for our regional youth.

**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.**

The following letters of support for this career launch endorsement are attached:

From employers committed to hiring WVC graduates:

1. Chelan Public Utilities District
2. Confluence Health
3. Washington State University
4. US Aluminum Castings
5. Lamb Weston

From the regional network and skill source:

1. North Central Education Service District
2. Skill Source

**P7. Description of resources, supports, or other processes to recruit and support students from underserved backgrounds (e.g. including students of color, students from low income families, English language learners, students with disabilities, foster students, students experiencing homelessness, students from single parent homes, and other populations that face barriers to employment); or create an implementation plan to do so.**

To answer the question above, this section has been divided into the following sub-sections:

1. The demographics of our region;
2. How WVC supports the enrollment of underserved students in our region;
3. Supports that WVC provides to all students;
4. How WVC intends to build a career connected learning continuum beginning with the Career Explore in high school.

1. The demographics of our region and at WVC

The following data describes the high school demographics of the WVC service district in Chelan, Douglas, and Okanogan Counties. There are 19,474 high school students within the service district and half (56%) of those students are defined as low income (eligible for Free and Reduced Price Meal). The source of this data is the information submitted by school districts through the Comprehensive Education Data and Research System. There are locally contextualized living wage guidelines that determine this eligibility. Approximately 40% of these students within the WVC service district are Latinx ethnicity, 52% Caucasian, and 8% combined other ethnicities.

The WVC demographics reflect those of our service district which demonstrates that the college recruits and supports students of color from low income and rural areas. WVC is a

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designated Hispanic Serving Institution with approximately 35% of degree seeking students with Latinx ethnicity and approximately 12% representing other minorities (Figure 1). WVC enrollment of Latinx students is over twice the statewide average of 14.5%. WVC is one of six designated Hispanic Serving Institutions in Washington State (2018-2019). There are several programs (CAMP, TRIO, MESA) designed to provide support services to Latinx students and the 3 year degree completion rates for Latinx students at WVC are about equal (actually 1.2% higher) than Caucasian students. Approximately 50% of the WVC enrollment is from the Wenatchee and East Wenatchee area and the remainder of student enrollment is from all over Washington with higher percentages of students coming from rural areas east of the cascades (Figure 2). On average, for the last five years, 30% of students enrolled at WVC are supported by Pell grants which provides an estimate of the number of students from low-income families.

Figure 1. Enrollment diversity of degree seeking students at WVC (2012 – 2019 enrollment)

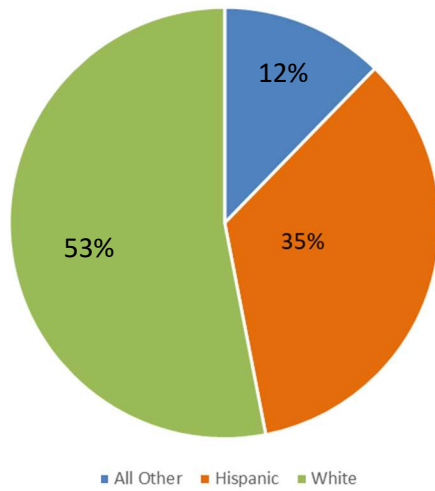
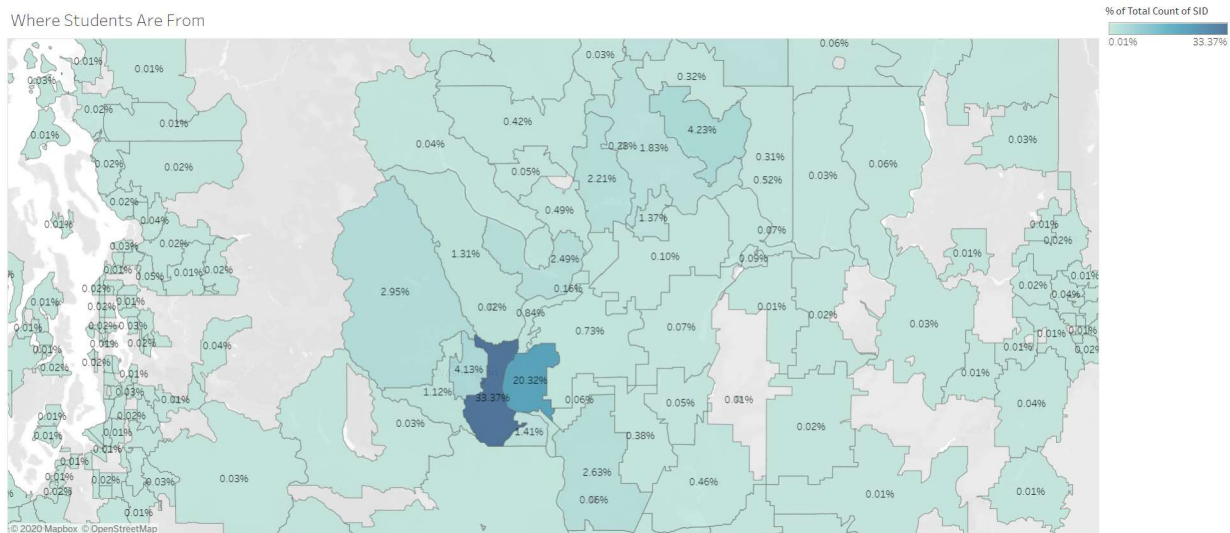


Figure 2. WVC Enrollment Demographics (Fall 2019)





2. How WVC supports the enrollment of underserved students in our region;

WVC recruits and supports students from underserved backgrounds through coordination with Skill Source and Work Source. In addition, the constituency of the WVC service district is primarily rural areas that are low income and have a high proportion of Latinx families where English is not the primary language spoken at home. The following text describes these efforts to educate populations that may otherwise face barriers to employment.

WVC coordinates with Skillsource and Worksource to reach out to unemployed and low skilled workers in the service district. Both Skillsource and Worksource refer potential students to Riva Morgan, director of WVC work force education programs. WVC has a work force training grant that can help these students pay for their first quarter of school including tuition, books, and fees. Then, WVC coaches these students with finding other scholarship funds to pay for additional schooling through completion of FAFSA and other financial aid sources through specific programs, for example, farm workers, food stamps, or state programs such as opportunity grants. WVC also offers workshops when employers lay off employees such as an upcoming workshop for Pier 1 and previous work with Alcoa. Work with Skillsource and Worksource referrals helps WVC reach youth and adults from a wide range of socio-economic backgrounds including youth of color, youth from rural areas, out of school youth, English language learners, youth with disabilities, foster children, homeless youth, single parents, and other populations that face barriers to employment.

3. Supports that WVC provides to all students;

WVC is committed to equity and inclusion so these principles are embedded within all of our programs to serve students of diverse ethnic and economic backgrounds. WVC ensures faculty and staff are diverse and trained in culturally responsive pedagogy in order to support our diverse student population. Campus houses an office of Equity and Inclusion as well as a Director of Tribal Relations and a Director of Student Access. These offices have helped to develop student support programs such as MESA, TRiO and CAMP. MESA is a nationally recognized academic program that provides academic support as well as personal and professional development for 1<sup>st</sup> generation college students, low income students and historically under represented students who are seeking science, technology, engineering, and math (STEM) degrees. The TRiO program provides support services to low income, 1<sup>st</sup> generation college students, and students with disabilities to help them graduate from WVC. The CAMP program (College Assistance Migrant Program) provides academic and financial support to students from migrant or seasonal farm working families during their first year of college. The Director of Student Access also works with information technology staff to ensure accessibility and incorporate universal design into the classrooms.

WVC also developed the DREAMers Taskforce to help undocumented students fulfill their dream of higher education. This group developed a web page where undocumented students can learn more about opportunities, campus resources, the admissions process, and financial aid resources. WVC also offers a transitional studies program to provide very low cost ESL (English as a second language) courses for the community. WVC also tries to translate all of our outreach materials into Spanish and English to allow for increased language access to students and their families.

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In addition to the programs offered to ensure diversity, equity and inclusion as described in the section above, WVC offers the following student support services:

- Advising – WVC has Faculty Advisers and Educational Planners to help students pursue educational goals. Generally speaking, Educational Planners help new and transfer students get started with their first quarter of classes at WVC. After that, students begin working with their Faculty Adviser for ongoing advising help. Former students can meet directly with their Faculty Adviser.
- Career center - WVC has a fully staffed Career Center that provides student coaching and mentoring as well as connecting students to work study opportunities off campus.
- Child care - WVC offers sliding fee scale childcare for students through a partnership with the Westside alternative high school. This nationally-accredited program provides quality, licensed child care to children from one month to five years of age while parents attend class, study and work.
- Counseling - WVC offers free, confidential, short term (3-5 sessions) counseling with professional counselors in the counseling center. Services aim to help students explore concerns and discover new strengths, insights and ways of coping.
- Disability services – the student access department helps students with physical or learning disabilities in one or more of the following ways: providing alternative textbooks, classroom re-location or furniture, communication assistance (captioning, sign language interpretation, video), development of absence agreements, providing test accommodations, and/or finding housing accommodations in residence halls.
- Financial aid and scholarships – the financial aid office assists students in applying for all types of financial assistance, including grants, work study opportunities, veteran benefits, scholarships and student loans. WVC also awards scholarships to approximately 200 students annually; amounts vary up to full tuition.
- Health clinic – Columbia Valley Community Health operates a health clinic on campus 3 days/week. The health clinic employs a bi-lingual nurse practitioner and students can drop in without appointments. The clinic accepts most insurance policies.
- Health insurance – WVC offers low cost accident only health insurance to students through Relation Insurance. Policies to cover dependents are also available.
- Transportation support- WVC is committed to making our college and programs accessible to everyone and therefore, all WVC students receive a free bus pass for our local bus system LinkTransit. This allows students to travel in from rural underserved and outlying areas of our service district.
- Tutoring - Tutoring services provide supplemental instructional support in a dynamic, collaborative learning setting to enhance the educational experience at WVC. Tutoring services are available free of charge to all WVC students enrolled in classes.
- Veterans programs - The WVC Veterans Office acts as a liaison between students and the Veteran Affairs Department of Education to provide students with information regarding VA educational benefits, tuition discounts, military tuition assistance and military gift credits while at WVC. This office helps guide students through the college application process and provides referrals to other campus services.

4. How WVC intends to build a career connected learning continuum beginning with the Career Explore in high school.

There are nine high schools and six middle schools within the service district that offer a total of 21 different classes with course content (or clubs) aligned with engineering courses offered at WVC. There are currently over >1800 students enrolled in these courses. These 1800 students enrolled in Robotics and/or Vex courses or clubs are the targeted high school audience for enrolling youth in Applied Engineering Technology programs at WVC. If 1 - 10% of these students (18-180) enrolled at WVC in engineering related programs each year, this would boost enrollment in the engineering career launch programs.

To promote career awareness and exploration as well as provide high school students with career exposure opportunities, WVC will implement the following actions as part of an enrollment strategy in the Engineering Technology career launch programs:

- WVC engineering faculty will participate in local job fairs (College and Career Expo)
- Develop an engineering career launch video that highlights local jobs in engineering technology and educational opportunities at WVC.
- Host events at the WVC campus to expose middle and high school students to educational opportunities and career in engineering (Pizza, Pop, and Powertools and Try a Tech events).
- Consider development of a week-long summer school program on WVC campus that links what students learn in Robotics and Vex courses (in middle and high school) to college level coursework and local jobs in engineering technology. For example, this camp would visit local job sites with engineering technology employment opportunities and expose high school students to equipment on WVC campus that is part of engineering technology program (3D printers, PLC's, etc).
- Partner with NCESD to get high school students into job shadows and industry tours; several companies have offered to provide tours when WVC reached out to ask about internships and entry level job opportunities.
- Provide high school counselors information about local jobs (job descriptions, list of employers, pay range, and educational opportunities) in engineering technology.
- WVC faculty will connect with middle and high school students via live classroom sessions and/or recorded zooms to share information about local jobs in engineering technology and local educational opportunities at WVC.
- Prepare printed outreach materials about engineering technologist jobs and educational opportunities at WVC for distribution to middle and high school students that participate in the events listed above.

## Industry-Related Checklist

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

1. Chelan Public Utilities District, 327 N. Wenatchee Ave, Wenatchee WA
2. Confluence Health, 820 North Miller Street, Wenatchee, WA
3. WSU Extension, 24106 N. Bunn Road, Prosser, WA
4. US Aluminum Castings, 14351 Shamel St, Entiat, WA
5. Lamb Weston, 1005 E. St. SW, Quincy, WA

See also the addresses for 13 employers who have been identified to offer paid internships for engineering technology students (Table 2 included at the end of the narrative).

### I-R2. Hourly wage for Career Launch participants.

Chelan PUD pays student interns a range of \$13.92- \$16.51 depending upon the position and the applicant experience. WSU Extension pays summer interns a \$4500 stipend for 10 weeks of work plus they cover up to \$1200/month for housing expenses. Confluence Health, US Aluminum Castings, and Lamb Weston pay interns  $\geq$ \$13.50/hour depending upon the engineering position available and experience of the applicant.

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

Several entry level positions have been identified for BAS-ET graduates. The following text highlights job titles and descriptions for five different positions where BAS-ET graduates would be well-qualified to apply for upon graduation. Key skills are underlined in this text for incorporation into section IR-4 below.

#### 1. Test Technician III, Rosemont Specialty Products, Wenatchee

##### Job Description -

Performs difficult acceptance tests or calibrates standard and non-standard electronic or mechanical assemblies. Perform mathematical calculation on all electronic assembly.

##### Duties and Functions-

1. Read test schedules, work orders, test manuals, performance specifications, wiring diagrams and schematics to determine testing procedure and equipment to be used.
2. Test functional performance of systems, subassemblies and parts under specified environmental conditions, such as temperature change and pressure using testing devices including temperature chambers and dead weight testers.
3. Performs unique tests utilizing complex electronic and mechanical test equipment.
4. Works with engineering in developing test procedures and documentation for pre-production and first run units.
5. Sets up tests using verbal instructions and sketches.
6. Performs troubleshooting and repairs non-standard and pre-production electronic and mechanical assemblies.

7. May conduct failure analysis testing on field returns.
8. May utilize and operate microprocessor-based test equipment in test setup.
9. Participate in 5-S activities
10. Performs work of a miscellaneous nature as required.
11. Handle high pressure gas cylinders.
12. Train other test Technicians on compensation calculations and test procedures.
13. Calculate Trim Resistor values
14. Work with customer representatives on test processes when needed.

## 2. Electronics Support Technician, Wenatchee School District

### Job Description:

Provide full support, repair, and record tracking of digital and analog clock and bell systems and security, fire alarm systems and keyless entry support. Secondary support for other electromechanical devices as required when no other support available. Preparation of all schematics and required records therein, and help desk communications for said supported systems.

### Essential Duties and Responsibilities:

1. Manage the costs controls for electrical repair.
2. Resource management such as but not limited to maintaining equipment, supplies, inventory and improved service.
3. Prepares work schedule for all repair of technology and introduces changes in work order priorities.
4. Provide installation, maintenance, repair, and programming of alarms, clocks, and bell systems, including all modular associated subsystems (interface with telephony and network systems technician) and keyless entry support.
5. Provide support for the integration and servicing of non-contracted security and alarm systems to include infrastructure planning, programming, passive and active device service and troubleshooting. Coordination and quality control/quality assurance of contracted security and fire alarm systems. Work with Safety and Security for scheduled verification of function and response for systems testing of fire and burglary (security). Assist in troubleshooting keyless entry system failures.
6. Ensure Alarms, Clocks, and Bell installations, upgrades, repairs are in compliance with all federal, state and local regulations. Including Audit management.
7. Maintains assigned departmental records and prepares activity and statistical reports when required
8. Plan and schedule the work of assigned areas to ensure proper input of Tech Work Order assignments to meet the system requirements and needs
9. Provide input to electronic installation, repairs, and deployments

### 3. Electrical Engineer I, Chelan PUD

#### Job Description:

This position performs entry level analysis, design and construction of electrical power and communication systems and assists with project management activities related to the planning, design, construction, operation, maintenance and rehabilitation of hydroelectric generation plants and related facilities such as switchyards, substations, etc. The position requires entry-level knowledge of the principles, practices and procedures, including materials, equipment and techniques, used in professional level work in the field of electrical engineering and project management. The position works under close or continuing supervision and requires limited exercise of judgment when developing designs and design criteria, determining methodology and developing alternatives.

#### Job Functions:

Design Engineering - Perform basic electrical engineering design and analysis for projects under the direction and supervision of higher level engineers. Prepare cost estimates. Write technical purchase and construction specifications. Prepare material and/or labor bid document packages. Follow engineering QA/QC procedures. Review submittals and respond to requests for information during construction. Develop inspection and testing plans. Inspect fabrication and construction activities, materials, work products and troubleshoot construction problems. Prepare start-up and training plans for operation and maintenance of projects.

Planning and Preliminary Engineering - Perform basic engineering planning, feasibility studies (including technical report writing), cost estimating, economic analyses and develop alternatives to help determine solutions to operational problems, regulatory concerns, efficiency improvements, asset management issues, etc.

Project Management - Develop and assist with implementation of scopes, schedules and budgets for basic projects or less complex portions of more difficult projects. Oversee and monitor project activities from concept to close out. Communicate project progress to internal clients, supervision and management. Write status and tracking reports. Give presentations including project recommendations to teams, management groups and the Commission. Procure materials. Participate in the selection of consultants and assist with management of consultant contracts. Ensure compliance with QA/QC procedures to maintain the quality of project deliverables.

Operations and Maintenance Troubleshooting and Technical Assistance - Troubleshoot operations and maintenance problems at the request of plant personnel. Clarify and pinpoint problems. Develop testing methods and alternatives. Provide alternative problem solutions. Write brief reports describing possible solutions and recommendations.

4. Electrical Technician, Douglas Public Utility District

Job Description

Duties will include installation and maintenance of a wide variety of electronic control and communication systems including: digital wireless communications; VHF mobile radio; fiber optics; telemetering; SCADA master station and remote terminal units; substation IED's such as PLC's, meters, protective relays, reclosers, etc.; telephone systems; computer networking equipment, personal computers and peripherals, low voltage connections and other duties as assigned

Job Qualifications:

Two years of college or appropriate school training, or experience in the communication trade. Have the ability to read and revise engineering drawings and diagrams and the ability to write complete and accurate reports describing equipment tests or trouble investigations.

5. Control Electrician, Lamb Weston, Quincy

Job Description - The Individual is responsible for the following:

- Perform regular assigned checks.
- Keep logs and scheduled work list up to date.
- Equipment repair, overhaul and trouble shooting.
- Proper start-up and shut-down of plant equipment.
- Training and supervision of subordinates and peers.
- Develop work lists and equipment modification recommendations.
- Follow safety procedures
- Actively practice and abide by all Company work, safety and personal hygiene rules and regulations as outlined in the employee handbook

Job Qualifications - Individual must be able to:

- Read, draw and edit electrical and electronic schematics.
  - Design control circuits.
  - Troubleshoot complicated electrical and electronic systems.
  - Program and troubleshoot PLC's with the aid of the P.C. programming equipment.
  - Calibrate and repair plant electrical and electronic equipment such as, but not limited to: Red Lion read-outs; Taylor and Fisher controllers and recorders; electronic scales; metal detectors.
  - Troubleshoot and repair: computer terminals; solid state control boards; variable frequency controllers; pneumatic actuators; PLC's.
  - Use all basic electronic/electrical test equipment.
  - Run conduit and wiring per NEC.
- Able to work and troubleshoot on 120v, 460v, and 4160v 3 phase electrical wiring

**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.**

The pay range for the five entry level positions listed above is \$26-30 per hour.

Table 4 aligns the BAS-ET Program Learning Outcomes with some of the key skills described above in entry level positions and the courses where students learn and apply this information to prepare them for the work force. Several key skills listed in the job descriptions are underlined and included in the table below to document how the BAS-ET program curriculum aligns with these jobs.

Table 4: Program learning outcomes and job requirements

<b>BAS-ET Program Learning Outcomes</b>	<b>Key Skills (text underlined in job descriptions above)</b>	<b>Courses in the BAS-ET program that teach these skills</b>
Apply their knowledge of the discipline to identify, analyze, synthesize and solve problems within the field of engineering technology.	Trouble shooting repairs, servicing, testing, calibrating, evaluating, track/record, QA/QC mathematical calculation	Math 30 credits pre-calculus, calculus, statistics, Physics 15 credits, Chemistry 10 credits, ELEC 115 Applied Electricity, ELEC 225
Possess the technical skills to be immediately productive in the workforce and have successful careers in regional, state or national electronic and mechanical product and system development industries	Technical abilities in electrical systems and mechanical assemblies including installation, maintenance, analysis, prototyping, design, programming, and re-design. Experience with PLC's wiring diagrams and schematics, circuits, PCB's	industrial Electricity and Controls, ELEC 226 Wireless, ELEC 325 Instrumentation, ELTRO 240 Industrial hydraulics and pneumatics, ENGR 105 and 106 CAD, ENGR 214 Statics, ENGR 315 Material Science, ENGR 329 Mechatronics, ENGR 325/326/327/328 Mechanical strength, fluids, dynamic systems and hydraulic controls, ENGR 415 Capstone project
Utilize effective management methods with a commitment to quality, timeliness and efficiency.	Project management and planning principles such as cost reduction/control, compliance with regulations, and scheduling work	ENGR 310 Project management, ENGR 201 and 401 Engineering Safety, ENGR 410 Advanced Engineering Project Management, ECON 201 Economics, ECON 305 Professional ethics
Be able to successfully communicate in oral, written and visual modalities.	Coordinate with others and write reports	CMST 220 Public speaking ENGL 101 Composition ENGL 235 Technical writing



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

Endorsement letters attest that work opportunities will be in compliance with local, state, and federal regulations.

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

Endorsement letters attached state that students will be supervised and mentored during internships. The following text further describes the supervision and mentorship provided by the employer and WVC.

BAS-ET students must enroll in a 5 credit Cooperative Work Experience (CWE) course in order to complete their degree. As part of this course, students will participate in paid internships offered by local employers. Student interns are typically offered an internship that is equivalent to working full-time (40 hours per week) for the duration of one academic quarter (8-11 weeks or approximately 400 hours). Alternatively, students may choose to work fewer hours per week and complete their CWE course and internship by spreading the 400 hours out over more weeks. Students must apply for the paid internship position, sit for an interview, and be hired by the company in order to complete the paid work experience. At the worksite, students will be trained and complete assigned tasks while working with an industry mentor. Students will work with their worksite supervisor and a college faculty member to complete the CWE course requirements. The CWE course requirements include goal-setting, a site visit and supervisor and student evaluations as well as activities intended to reflect on student learning. Students also develop learning objectives, maintain an hourly work log with descriptions of daily work completed, and draft a final report to describe how they made progress towards their learning objectives during their work experience. While students are enrolled in the CWE course, they participate in five discussion sessions that center around topics associated with the work experience. Upon completion of the work experience, WVC faculty help students define a clear path for the future. WVC faculty help students revise their resume and cover letter to incorporate their work experience gained during the paid internship. WVC faculty also work with students and employers to conduct exit surveys and interviews to evaluate the work experience from the employer and student intern perspective.

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

Students could earn any one of the following certificates or 2 year degrees at WVC or another institution prior to entering the BAS-ET program:

Associate in Applied Technical Sciences (AATS) degree – WVC has three AATS degrees in Industrial Technology that contain the pre-requisite coursework for entry into the BAS-ET program:

1. Aerospace Electronics AATS

This one-year aerospace electronics certification or 2-year degree program provides a broad foundation in electronics training and prepare students to work in the aerospace

industry. WVC is part of the Air Washington consortium and will train electronics workers for manufacturing and servicing of electronic components and equipment. These programs offer preparation for multiple nationally recognized industry certifications that may lead to employment and opportunities for future advancements with companies specializing in manufacturing or servicing all types of electronic equipment, including manufacturing and servicing of aerospace electronics.

2. Industrial Electronics AATS

The industrial technology - electronics program provides training for maintenance electricians and electronics technicians within industrial facilities such as wood processing plants, agricultural food storage and processing warehouses, manufacturing plants and hydroelectric power facilities. It also provides advanced-level training and skill improvement for plant electricians and other employees seeking to improve their work classification within their company on modern electronic circuits, programmable logic controllers (PLCs) and control systems. Program graduates are qualified to work as electrical or electronics repair technicians or electro-mechanical technicians.

3. Engineering Technology AATS

This two-year program is geared for today's high technology-based job market. It closely couples electrical and automation principles with high-level math and science coursework. The degree's primary focus is to have graduates that can integrate complex repairs and upgrades fresh off the planning stage and see them to completion. This degree can offer students three paths to follow after graduation: The first path is technician level employment. The second path is to transfer into our four-year BAS-ET program. It encompasses all the classes required to make the BAS-ET program a true four-year time investment. The third path would be to take a few additional courses to provide the student with enough credits to also earn a two-year transfer degree (DTA). The DTA will allow them to pursue engineering or similar degree at other four-year institutions.

Direct Transfer Agreement (DTA)

Students could also earn a DTA prior to entering the BAS-ET program. The DTA is a two-year guided study of liberal arts and sciences that lead to the Associate of Arts and Sciences degree commonly referred to as the Transfer degree. Most students who plan to transfer to a 4-year university choose this option. That said, students could choose to remain at WVC and earn a 4-year degree through the BAS-ET program after completion of the DTA.

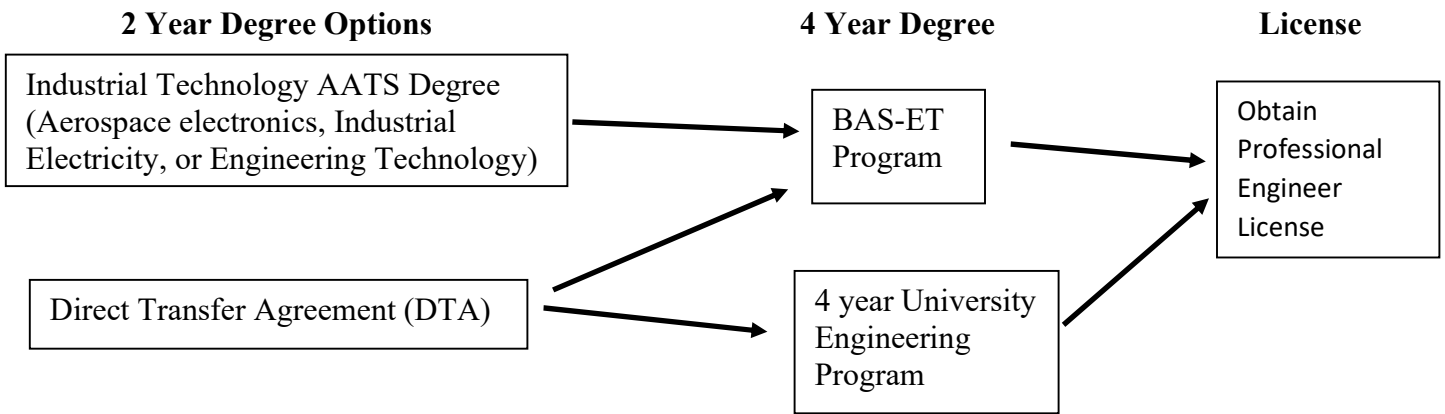
After completion of one of the above-listed certificates or 2-year degrees, students may work as a Technician 1 or in a position that is entirely QA/QC and/or in shift work positions. These positions typically earn minimum wage (\$13.50/hour) up to \$20-25 per hour with some years of experience.

In order to gain more experience with problem-solving and engineering system design, students may choose to return to school and earn a 4-year degree in Engineering Technology. With a 4-year degree and some work experience, graduates from this program are more qualified for salary positions that work during the day and may involve team lead positions or project management roles. Students who complete a 4-year degree in engineering technology typically start earning  $\geq$ \$25/hour and with additional years of work experience, those wages could increase to  $\geq$ \$35 per hour.

Upon completion of the BAS-ET program at WVC, students could earn a MS or PhD in Engineering. For example, BAS-ET program graduates would be qualified to apply for a MS in Engineering Technology from Central Washington, a MS in Engineering Management at Arkansas State University (on campus or online) or an M.S. or PhD in Biological and Agricultural Engineering through WSU at their Extension Center in Prosser Integrated Agricultural Research and Extension Center.

The wages listed above were obtained from local industry outreach but they are consistent with wages reported for Engineering Technicians on the Washington State Department of Employment Security web site which lists the average hourly wage as \$36.24 per hour and \$75,373 per year. This average wage likely includes many workers with one or more years of experience.

The following schematic depicts the scaffolding pathways described above and in Section IR-8.



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

There are no national recognized professional standards identified for occupations such as engineering technologist or graduates with applied skills in electronics and mechatronics. That said, there are electrical and engineering professional standards that students could pursue with some work experience and this educational background.

Completion of some of the electrical coursework allows students to earn electrical hours towards the Washington State Labor and Industry (07) Nonresidential Maintenance Specialty Electrical License. Thus, an electrical license would be one option that students with a 2 or 4 year degree in Engineering Technology could pursue.

BAS-ET graduates can also become licensed as a Professional Engineer (PE) in the State of Washington. They can apply for and pass the Fundamentals of Engineering Exam which provides certification as an Engineer in Training (EIT). They will need to earn eight years of professional level experience under the direct supervision of a licensed engineer. Once that apprenticeship is complete, a graduate can apply for and pass the Principles and Practices of Engineering exam which grants a license as a PE.

**I-R9. Signed letter from employers' partners attesting that Career Launch completers will be ready for specified entry-level jobs, including an optional, non-binding commitment estimating number of Career Launch completers they plan to interview/hire over the first three years of the program.**

There are five letters from employer partners that attest that the students who graduate from the WVC BAS-ET program will be well-qualified for entry level employment or internships upon completion of their coursework. Each letter contains the following information:

1. Evidence that they are familiar with the coursework (knowledge, skills, and abilities) taught in the BAS-ET program at WVC.
2. A statement that each entry level position or internship will be paid at least at the minimum wage level and a commitment to interview BAS-ET students on an annual basis and offer paid work opportunities to qualified students.
3. A statement about how the training provided by WVC makes the student a good candidate to be competitive for an internship and/or entry level paid position. The paid work may start as an internship as described in the letters and most of these companies want to promote employees from those entry level paid intern positions.

The companies that have written letters of support for this endorsement hire entry level employees with training in electronics and/or mechatronics into a variety of positions depending upon the experience of the student and the position that needs to be filled by the company at that time. In general, entry level positions for BAS-ET program graduates have more variation in pay rate and job titles compared to industries where entry level positions are very specific like auto repair or HVAC installation and maintenance. That said, all of the companies interviewed in Table 2 indicated that they want to hire locally trained (or educated) employees and they want to hire students into entry level paid positions which are often internships and then allow them to move up in the company as they learn the equipment specific to that facility and demonstrate their skills on the job. Table 5 includes the statements from each letter of support that demonstrate that the employer is 1) familiar with WVC coursework for the BAS-ET program; 2) a statement of commitment; and 3) a statement about how the BAS-ET program graduates are competitive candidates for entry level paid work which in some cases, might start as an internship.

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Table 5 summarizes how the endorsement support letters attached demonstrate that WVC graduates will be Career Launch ready for entry level employment opportunities:

Employer	Familiar with WVC coursework	Statement of Commitment	BAS-ET grads competitive candidates
Chelan PUD	WVC has relevant degree programs that provide valuable educational experiences to prepare students with current technology and equipment such as PLC’s, hydraulics, and robotics.	Employs engineering interns making \$13.92-16.51/hour and hires ~15 interns per year	WVC produces career-ready students and students who have completed a work experience at CPUD have an advantage in the hiring process. CPUD intends to hire >1 entry level position in electronics, info tech, and engineering for the next 3 years
WSU Extension	WVC graduates from the BAS-ET program would be candidates for graduate level studies in Biological Systems Engineering programs at WSU	While not stated in the letter, the link to the undergraduate research web site confirms the stipend pay of \$4500 for 10 weeks plus living expenses up to 1200 per month.	The paid entry level work experience at WSU would make WVC students strong candidates for continuing their education or preparing for jobs in agricultural automation
Confluence Health	This statement demonstrates an understanding of the WVC curriculum: engineering technology students might be well-suited to assist with an energy audit, HVAC programming or supervision, or with preventative maintenance or repair of biomedical equipment.	Confluence offers internships to WVC allied health students and is willing to create an equivalent opportunity for WVC engineering students where they would apply on an annual basis for positions in the Engineering or Information Technology Departments.	Prepared to offer successful students who meet our employment qualifications, interviews and potential internships or employment based upon our hiring needs each year.
US Aluminum Castings	Participation as an advisory committee member during the BAS-ET program development (under the Industrial Technology program).	We are prepared to offer qualified students an interview and potential internships or employment based upon our hiring needs each year.	The WVC Engineering Technology curriculum prepares students with mechanical, electrical, and system integration engineering skills that would make them well-qualified for positions at US aluminum castings
Lamb Weston	The electrical and mechanical engineering coursework taught at WVC is very applicable to automated food processing work at Lamb Weston.	Lamb Weston is interested in providing paid work experiences or internships for WVC Engineering Technology students.	Lamb Weston has hired several graduates from WVC indicating that programs prepare students for the work force.

**Academic-Related Checklist**

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

Wenatchee Valley College (WVC)

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

Tables 6 and 7 summarize the BAS-ET coursework by competencies.

Table 6: BAS-ET Coursework by Subject Area

Subject	Course	Credits
Written Skills:	ENGL 101	5
	ENGL235	5
Quantitative Skills:	MATH 141	5
	MATH 142	5
	MATH 146	5
	MATH 151	5
	MATH 152	5
	MATH 153	5
Natural Sciences:	PHYS 114	5
	PHYS 115	5
	PHYS 116	5
	CHEM 161	5
	CHEM 162	5
Social Sciences and Humanities:	ECON 201 or 202	5
	PSYCH 100	5
	CMST 220	5
	PHIL 211	5
	SOC 101	5
<b>Total</b>		<b>90 credits</b>

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Table 7: BAS ET Program Requirements Organized by Discipline Specific Topics	
Electrical	Credits
ELEC 115 Applied Electricity	5
ELEC 225 Industrial Electricity and Controls	5
ELEC 226 Wireless	5
ELEC 325 Instrumentation	5
ELTRO 240 Hydraulics and Pneumatics	5
Engineering principles	
ENGR 105 Computer Aided Design	5
ENGR 106 Computer Aided Design	4
ENGR 201 Introduction to Engineering Safety	1
ENGR 214 Engineering Statics	5
ENGR 310 Project Management	2
ENGR 401 Advanced Engineering Safety	2
Mechanical Engineering/Mechatronics	
ENGR 315 Material Science	5
ENGR 325 Mechanical: Strength of Materials	5
ENGR 326 Mechanical: Fluid Mechanics	5
ENGR 327 Mechanical: Dynamic Systems and Control	5
ENGR 328 Hydraulic Control System	5
ENGR 329 Mechatronics	5
ENGR 405 Engineering Tech Capstone Prep	1
ENGR 410 Advanced Engineering Project Mgt.	5
ENGR 412 Internship	5
ENGR 415 Engineering Technology Capstone Project	10
<b>Total</b>	<b>95 credits</b>

Table 8 maps the program learning outcomes (numbered list below the table) with the course learning outcomes using the following knowledge levels: Inroduced, Developed, and Mastered.

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Table 8: Course mapping to Program Learning Outcomes		Program Learning Outcomes*						
Course	Course Name	1	2	3	4	5	6	7
MATH 141	Precalculus I	I	I	I	I	I	I	I
MATH 142	Precalculus II	I	I	I	I	I	I	I
MATH 146	Introduction to statistics	I	I	I	I	I	I	I
MATH 151	Calculus I	D	D	D	D	D	D	D
MATH 152	Calculus II	D	D	D	D	D	D	D
MATH 153	Calculus III	M	M	M	M	M	M	M
PHYS 114	General Physics I with lab	I	I	I	I	I	I	I
PHYS 115	General Physics II with lab	D	D	D	D	D	D	D
PHYS 115	General Physics III with lab	M	M	M	M	M	M	M
CHEM 161	General Chemistry I with lab	I	I	I	I	I	I	I
CHEM 162	General Chemistry II with lab	D	D	D	D	D	D	D
CMST 220	Public Speaking	I	I	I	I	I	I	I
ENGL 101	Composition: General	I	I	I	I	I	I	I
ENGL 235	Technical Writing	D	D	D	D	D	D	D
PSYC 100	General Psychology	I	I	I	I	I	I	I
ECON 201	Micro Economics	I	I	I	I	I	I	I
ECON 305	Professional Ethics	D	D	D	D	D	D	D
SOC 101	Introduction to Sociology	I	I	I	I	I	I	I
PHIL 211	Introduction to Ethics	I	I	I	I	I	I	I
ELEC 115	Applied Electricity	I	I	I	I	I	I	I
ELEC 225	Industrial Electricity and Controls	I	I	I	I	I	I	I
ELEC 226	Wireless	D	D	D	D	D	D	D
ELEC 325	Instrumentation	D	D	D	D	D	D	D
ELTRO 240	Industrial Hydraulics and Pneumatics	D	D	D	D	D	D	D
ENGR 105	Intro to Computer Aided Design	I	I	I	I	I	I	I
ENGR 106	Advanced Computer Aided Design	D	D	D	D	D	D	D
ENGR 201	Introduction to Engineering Safety	I	I	D	D	D	I	I
ENGR 214	Engineering Statics	D	D	D	D	D	D	D
ENGR 310	Project Management	I	I	D	D	D	I	I
ENGR 315	Material Science	D	D	D	D	D	D	D
ENGR 325	Mechanical: Strength of Materials	D	D	D	D	D	D	D
ENGR 326	Mechanical: Fluid Mechanics	D	D	D	D	D	D	D
ENGR 327	Mechanical: Dynamic Systems and Control	D	D	D	D	D	D	D
ENGR 328	Hydraulic Control System	D	D	D	D	D	D	D
ENGR 329	Mechatronics	D	D	D	D	D	D	D
ENGR 401	Advanced Engineering Safety	D	D	D	D	D	D	D
ENGR 405	Engineering Tech Capstone Prep	I	D	I	I	I	I	I
ENGR 410	Advanced Engineering Project Mgt.	D	D	D	D	D	D	D
ENGR 412	Internship (can be completed in summer)	D	D	D	D	D	D	D
ENGR 415	Engineering Technology Capstone Project	M	M	M	M	M	M	M



Program Learning Outcome numbers in Table 8 refer to numbered outcomes listed below:

1. Apply their knowledge of the discipline to identify, analyze, synthesize and solve problems within the field of engineering technology.
2. Possess the technical skills to be immediately productive in the workforce and have successful careers in regional, state or national electronic and mechanical product and system development industries.
3. Utilize effective management methods with a commitment to quality, timeliness and efficiency.
4. Be able to successfully communicate in oral, written and visual modalities.
5. Demonstrate increasing levels of leadership and responsibility during their careers.
6. Have demonstrated professionalism and ethics understanding, respect for diversity and awareness of societal and global issues.
7. Display a desire and commitment for life-long learning through continued education, technical training and/or professional development.

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

Student Services: WVC provides strong academic support for its students to facilitate their success. WVC tenured faculty are available for face-to-face meetings on a regular basis and through email/phone to offer additional support to students and for advising.

WVC anticipates hiring a BAS Navigator, who will provide student readiness, admissions, progress, and educational planning support. Ideally, the BAS Navigator will have experience with student development and with college student personnel. Deans and Lead Faculty for each BAS program will coordinate duties with this BAS Navigator and assist as needed. The BAS Navigator will be the first contact for anyone with questions or concerns related to any BAS program. The BAS Navigator will also be required to have in-depth knowledge of the needs of business, industry and students in North Central Washington, including, but not limited to the local job market. In addition to Deans and Lead Faculty assisting the BAS Navigator, WVC also has a centralized Instruction Office available as support to all faculty, staff and students.

WVC faculty are committed to the success of every student throughout the each program. To facilitate success, the college has a director/navigator/retention specialist, who currently works with numerous Workforce Education students and who will expand to assist BAS students. The navigator will provide educational planning and support services to prospective BAS students. These services include: providing assistance with the application process and applying for financial aid; help with selecting and registering for classes; and referrals to Student Support Services as needed.

Student Services and Instruction personnel have been instrumental in the launch of WVC's first two BAS degrees. Monthly meetings have helped the college maintain a dialogue to get this underway—especially focusing on Curriculum, Financial Aid, Advising, and Admissions. The dedicated advisor for the program will be the faculty director at first, and as the program grows, the above noted BAS Director will be hired.

Library and Technology Services: Library resources extend beyond the book collection to include Ebrary's Academic Complete, a collection of 100,000+ undergraduate e-books. Academic journals are provided with core academic collections from ProQuest and Gale and specialized databases from other vendors. Articles not covered by WVC databases are easily accessible through the InterLibrary Loan service. The library makes available 85 databases, 49 of which are paid with the balance being free resources vetted by library staff. WVC offers in person library services on the Wenatchee and Omak campus. During campus closure, librarians have offered curbside pickup at least twice a week throughout the term and extended hours at the beginning and end of the term. To serve students in rural areas, the WVC librarians are available 24x7 online through the "Ask a Librarian" service. In addition, the WVC's Virtual Desktop service allows students to access their WVC desktop wherever they have internet access.

Financial Aid: The WVC Financial Aid Office assists students in finding and applying for financial assistance, including grants, work-study opportunities, veteran benefits, scholarships and student loans. Programs available include the Federal Pell Grant, Federal Supplemental Education Opportunity Grant, Federal Direct Student Loans, Federal Direct Parent Loan to Undergraduate Students, Veteran Administration Benefits, Federal Work Study, Washington State Need Grant, Washington State Opportunity Grant, Washington State Work-Study Program, Wenatchee Valley College Institutional Grant, Wenatchee Valley College Tuition Waiver, and Wenatchee Valley College Tuition Payment Plan. Workforce Education's Workforce Grants staff assist students eligible for funding through the Worker Retraining program. Workforce Grants staff also provide extended wraparound services and aid students with non-tuition expenses.

Career Center: The WVC Career Center supports students with all aspects of the career development process, including résumé and cover letter reviews, interview preparation, job hunting strategies, and overall career and life planning targeted towards the student's individual career goals. In addition, the Career Center can help prepare students for their required internships. The Career Center has been instrumental in finding internship partners for other BAS programs. This service will continue with students and helping them secure the residency requirement for these programs.

Child Care: Through a partnership with WVC and Wenatchee School District, affordable childcare services are available to WVC students at the Westside Early Learning Center. The program provides quality, licensed childcare for children from one month to five years of age while their parents(s) attend class, study or work.

Counseling: Counselors provide academic, career and personal counseling. The services are free, voluntary, and confidential for WVC students. Student services/counseling is dedicated to supporting students in their pursuit of academic and personal growth.

Computer Labs: There are over a dozen computer labs and learning labs available for students in Wenatchi Hall, Wells Hall, and in the Brown Library. In addition, the Library lends Chromebooks and other technology to students for short-term and long-term use. In the future, WVC has already made plans to reevaluate the computer lab needs moving forward.

**Disability Resource Center:** The Disability Resource Center provides assessment and accommodations for students with documented disabilities. They provide special course materials, coordinate testing for disabled students and assist faculty to provide appropriate accommodations.

**The Tutor Center and Write Lab:** Tutoring services are available free of charge to all currently enrolled students, regardless of number of credits being sought. The goal of tutoring is to provide supplemental support that will enhance the educational experience at WVC. The Write Lab provides help to all WVC students who have writing assignments.

**Academic Supports:** WVC will begin student support services from the initial interest in these programs. WVC is aware that many students work full-time while attending classes. This can be a significant challenge specifically for students whose first language is not English. Along with supports from ECE faculty, the WVC write lab, and the WVC tutor center these programs have the opportunity to collaborate with the WVC Continuing Education department to develop community courses focusing on student success as needed.

**Veterans Administration Programs:** The Veterans Affairs Office assists all eligible veterans, reservists, dependents and VA chapter 31 students. A Veterans Study Lounge is also available in the Brown Library. Over \$20,000 is made available to veteran students for work-study opportunities throughout WVC each academic year. Veterans Affairs Coordinator, Laura Murphy-Belser, works with veteran students to address challenges in veteran benefits and non-face-to-face course-work.

WVC provides a comprehensive range of student development services to support student learning needs outside the classroom. These include:

- Educational planning for students, class scheduling for the first quarter of enrollment, understanding program requirements, and developing an educational plan
- Financial aid, including federal and state need-based aid and private scholarships
- Counseling services to address personal and emotional issues that are interfering with success in college
- Disability support services and accommodations
- Multicultural services, including academic and personal support and leadership development opportunities
- Career services, including career coaching and exploration, job search support, transfer guidance, mentorships, college work experience, and work-study job placements
- International student programs for students from abroad who are seeking an American collegiate experience and education
- Student programs, including leadership opportunities through the student senates and a broad range of clubs and organizations
- MESA: offers a friendly and comfortable space where students gather to study and engage in STEM. Members of MESA receive a unique combination of enrichment activities, academic support, industry involvement and an encouraging community environment.
- Faculty advising: one-on-one advising from designated faculty subject matter experts; coaching students with course selection, degree completion and transfer.

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- Tutor Center: The goal of tutoring is to provide supplemental instructional support. Tutoring services on the Wenatchee campus and on the Omak campus meet that goal by providing a dynamic, collaborative learning opportunity that enhances the educational experience at WVC.
- Write Lab: provides help to all students who have writing assignments with one-on-one tutoring and coaching.

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

Upon completion of the BAS-ET program, students will have earned two stackable academic postsecondary credentials:

- Associates Degree (90-105 credits depending upon if students have earned an AATS in Industrial Technology or a DTA).
- Baccalaureate of Applied Science Engineering Technology (110 credits)

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

WVC is currently seeking the ABET Accreditation for Engineering Technology. The ABET Accreditation provides assurance that a college or university program meets the quality standards of the profession for which that program prepares graduates. WVC prepared a Readiness Review and will receive comments on that application in December 2020. WVC will prepare a Self-Study Report for submittal in Spring 2021.

**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.**

WVC currently offers dual credit articulations with local high schools so that high school students earn college credit for engineering course work. Currently, four high schools have classes that qualify for ENGR course credit at WVC: Eastmont, Wenatchee, Okanogan, and Cashmere. WVC is working to expand the dual credit articulation agreements and one is currently in progress for an ENGR course offering at Wahluke High School.

WVC also has a agreements with Bates and Bellingham Community Colleges that students with a 2 year degree from those schools can directly enter the BAS-ET four year program. WVC is coordinating with Big Bend Community College and Yakima Valley Community College about how to co-offer ENGR courses for engineering related degree programs at each institution.

End of Application.

Table 2. Representative Employers for Student Internships and/or Entry Level Positions for WVC BAS-ET students

Company	Address	Interns	Intern Pay	Entry Level Position Title or Description	Entry Level Pay
1	Chelan County PUD 327 N Wenatchee Ave, Wenatchee	Yes	\$ 13.92-16.51	Electrical Apprentice	\$29.78 - 47.64/hour
2	Confluence Health 820 N. Miller Street	Yes	≥13.50/hour		
3	Douglas County PUD 1151 Valley Mall Pkwy, East Wenatchee	yes	\$14.51	Technician positions or Apprenticeships (they have 3 year apprenticeships in system operations, lineman, and meterman)	Apprenticeships pay \$33.97/hour
4	Eastmont School District 800 Eastmont Ave, East Wenatchee, WA 98802	Maybe		Electrician	\$28.14/hour
5	Exotic Metals 12821 West McFarlane Road, Airway Heights	Yes	≥13.50/hour	Entry level jobs in technology and automation are available at the manufacturing facility in Airway heights	
6	Grant PUD 312 W 3rd Ave, Moses Lake, WA	Yes	≥13.50/hour	Engineer 1	
7	H5 Data Center 1711 M St NE, Quincy	Maybe		Facilities maintenance positions available.	
8	Intel 2200 Mission	Yes	≥13.50/hour	Fabrication or Manufacturing Technician or Corporate Services (Facilities Management) positions such as Mechanical engineering technician, Instrumentation/Automation control, systems engineer	20-30/hour pay determined specific for each position and applicant by offer consultants
9	Keyes Packaging 3715 State Hwy 97A North, Wenatchee	Maybe		Positions incorporate industrial electronics, automation, drafting, and PLC's. Typically hires from the union then employees move up within the company.	\$15/hour
10	Lamb Weston 1005 E. St. SW, Quincy, WA	Yes	>13.50/hour	Control Electrician	
11	Pacific Aerospace and Electronics 434 Olds Station Road, Wenatchee	Yes	\$15	Company produces electronic components for the defense, space, medical, and commercial industries and specialize in technically demanding ceramic and metal components and assemblies, hermetic connectors, and micro-electronic hermetic packaging	
12	Pacific Industrial Wenatchee	Yes	\$13.50	Small consulting firm that has offered capstone projects to BAS-ET students and might be willing to offer paid internships or contract employment for graduates with design and PLC skills	
13	Rosemont Specialty Products 5545 Nelpar Drive, East Wenatchee	No		Test Technician III	\$26-27/hour
14	Sabey Data Center 2200 M St NE, Quincy	Maybe		Entry level positions at Sabey for graduates with mechanical, PLC, and basic electrical training. Most positions start as entry level technicians and then get promoted	
15	Schweitzer Engineering Labs 2350 NE Hopkins Court, Pullman, WA 99163	Yes	>13.50/hr	Engineering Technician I, II, and III positions in Field Service, Hardware, Production Trouble Shooting, and Equipment Maintenance	
16	Stemilt 3135 Warehouse Rd, Wenatchee	No		ASRS Maintenance (Automated Retrieval System)	\$19.75 - \$23
17	Tree Top 3981 Chelan Highway II P.O. Box 1300 Wenatchee, WA 98801-0231	yes	≥13.50/hr		
18	US Aluminum Castings 14351 Shamel St, Entiat, WA 98822	Yes	>13.50/hr		
19	WSU Extension 24106 N Bunn Rd, Prosser, WA	Yes	\$2400/month plus 1200/month living expenses	No	
20	Wenatchee School District 235 Sunset Ave, Wenatchee	Maybe		Network Technician, Electronics Support Technician, and Maintenance operations	~\$30/hour



August 17<sup>th</sup>, 2020

To The Career Launch Endorsement Review Team:

Confluence Health has a long-standing working relationship with Wenatchee Valley College to provide internship opportunities for Allied Health students. We would welcome the opportunity to develop a similar internship program for Engineering Technology students. These students would apply on an annual basis for positions in the Engineering or Information Technology Departments. Engineering technology students might be well-suited to assist with an energy audit, HVAC programming or supervision, or with preventative maintenance or repair of biomedical equipment.

The Applied Engineering Technology program at WVC requires students to complete a 400 hour work experience which can be paid or unpaid. These internships at Confluence Health may be paid or unpaid depending upon the budget, student experience, and projects available each year. Students must meet the minimum qualifications, sit for an interview, and be 'hired-on' in order to participate in this experience. Students will work closely with a mentor and supervisor to ensure that they are properly trained on and adhere to local, state, and federal regulations covering the work and the workplace.

We are prepared to offer successful students who meet our employment qualifications, interviews and potential internships or employment based upon our hiring needs each year.

Feel free to contact me for more information about this endorsement and our partnership with WVC.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ryan Fancher', written over a light blue horizontal line.

Ryan Fancher  
Director of Engineering, CWH



**PUBLIC UTILITY DISTRICT NO. 1 of CHELAN COUNTY**

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(509) 663-8121 • Toll free 1-888-663-8121 • [www.chelanpud.org](http://www.chelanpud.org)

October 19, 2020

Joey Walter, Ed. D.  
Dean, Workforce Education and Transitional Studies  
Wenatchee Valley College  
1300 Fifth Street  
Wenatchee, WA 98801

**Re. Career Launch Program Endorsement BAS-ET Program**

To Whom it May Concern:

Wenatchee Valley College continues to be an excellent partner of Chelan County Public Utility District (CCPUD) in developing relevant degree programs and developing students into career-ready workers. We have been a strong supporter of the Career Connect program and we support the College in its efforts to meet the needs of students and employers by pursuing the career launch endorsement for the Baccalaureate of Applied Science Engineering Technology (BAS-ET) program.

CCPUD employs more than 750 workers, including fifteen students in paid positions each year. Paid student interns make \$ 13.92-16.51 per hour depending upon the position available and student experience. Most of our paid student positions are in engineering or technical fields. Students will work closely with a mentor and supervisor during their internship to ensure that they are properly trained on and adhere to local, state, and federal regulations covering the work and the workplace.

CCPUD cannot guarantee a job to our student employees at the end of their student engagement but we are nearly always recruiting for positions in these fields and candidates with experience specific to our organization and the nature of our work have a distinct advantage in the hiring process. I estimate we will recruit for five or more entry-level positions for electronics, engineering and information technology in the next three years. Further, these are well-compensated, career-track jobs.

Educational experiences using outdated equipment are of limited value in preparing students for real-world jobs. WVC is investing considerable resources to provide valuable educational experiences and prepare students with current technology and equipment such as PLC's, hydraulics, and robotics.

Please feel welcome to contact me directly for additional information.

A handwritten signature in blue ink that reads "Lorna Klemanski". The signature is written in a cursive style with a large initial "L".

Lorna Klemanski

Managing Director-Human Resources, Chelan County Public Utility District



October 19, 2020

Dr. Joey Walter  
Dean of Workforce Education and Transitional Studies  
Wenatchee Valley College  
1300 5<sup>th</sup> Street  
Wenatchee, WA 98801

Dr. Walter:

I am writing in support of the Career Launch program endorsement that Wenatchee Valley College (WVC) is seeking for the Bachelor of Applied Science Engineering Technology (BAS-ET). The Biological Systems Engineering program at Washington State University (WSU) conducts research and offers graduate education programs that apply scientific engineering principles to the processes of our natural world.

The BAS-ET program at WVC and faculties of the Biological Systems Engineering program at WSU have been working together to develop opportunities for WVC students to continue their education at WSU in two different ways. First, graduates with a BAS-ET degree from WVC could enroll in a MS or PhD program as Graduate Research Assistants (GRAs) at WSU to study Biological and Agricultural Engineering. Second, WVC students in the BAS-ET program could participate in paid summer research internship positions that apply engineering principles to agricultural production management. Research projects available might range from development of remote sensing tools or in-field site-specific crop management technologies.

Awarding students with paid positions (GRAs or summer internships) is dependent upon WSU securing external grant funds, qualification of the students and fit to particular project needs. More details on BSE Graduate program and summer internships are respectively at <https://bsyse.wsu.edu/graduate-program/> and <https://labs.wsu.edu/sankaran-phenomics/undergrad-research-exp/>

Students who qualify and participate in these paid positions will work closely with a mentor and supervisor to ensure that they gain a valuable work and educational experience. Feel free to contact me at (509) 786-9302 or [lav.khot@wsu.edu](mailto:lav.khot@wsu.edu) for more information about the WSU partnership with WVC.



Lav R Khot, PhD  
Associate Professor, Precision Agriculture  
Department of Biological Systems Engineering  
CPAAS, IAREC, Washington State University  
Phone: 509-786-9302, 509-335-5638  
Email: [lav.khot@wsu.edu](mailto:lav.khot@wsu.edu)  
<http://bsyse.wsu.edu/faculty/khot/>



11/11/2020

To The Career Launch Endorsement Review Team:

US Aluminum Castings participated as an advisory committee member for the Industrial Technology program when that committee included Engineering Technology and the Machining program. Ted Keyes currently participates as an advisory committee member for the Machining program. I am writing this letter of support for the career launch endorsement of the Engineering Technology program.

The WVC Engineering Technology curriculum prepares students with mechanical, electrical, and system integration engineering skills that would make them well-qualified as interns at US Aluminum Castings. Our company hires student interns for projects when there is a good match with student experience. For example, there is currently interest in equipment or process modernization that incorporates PLC's so that an analogue system can be programmed. Another example project that would be a good fit for involvement of an engineering technology intern would be designing a new tool and providing oversight as that tool goes into production.

Interns at US Aluminum Castings usually work during the summer with a starting pay of  $\geq$ \$13.50/hour. The WVC Engineering Technology students could apply for internship opportunities on an annual basis and this would help students complete their work experience which is required for their degree program. WVC students must meet the minimum qualifications, sit for an interview, and be 'hired-on' in order to participate in this work experience. Students will work closely with a mentor and supervisor to ensure that they are properly trained on and adhere to local, state, and federal regulations covering the work and the workplace.

We are prepared to offer qualified students an interview and potential internships or employment based upon our hiring needs each year. Feel free to contact Ted Keyes or myself for more information about this endorsement and our partnership with WVC.

Sincerely,

A handwritten signature in cursive script that reads 'Bonnie Ball'.

Bonnie Ball  
HR Manager  
US Aluminum Castings



Joey Walter, Ed. D.  
Dean, Workforce Education and Transitional Studies  
Wenatchee Valley College  
1300 Fifth Street  
Wenatchee, WA 98801

October 22, 2020

Dr. Joey Walter:

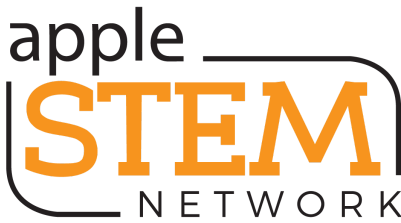
Thank you for reaching out to Lamb Weston while you work on the development of a Career Launch Endorsement for the Engineering Technology programs at Wenatchee Valley College (WVC). Lamb Weston has hired several graduates from WVC and we encourage our employees to take classes at WVC to continue their professional development. For employees who have worked at Lamb Weston for over 1 year, the company offers tuition re-imbusement for coursework that advances their professional career opportunities. The electrical and mechanical engineering coursework taught at WVC is very applicable to automated food processing work at Lamb Weston.

Lamb Weston is willing to provide student tours, job shadows, and collaborate on project work with WVC students. Lamb Weston is also interested in providing paid work experiences or internships for Wenatchee Valley College Engineering Technology students. These students would apply on an annual basis for paid hourly positions. Pay rates would vary depending upon the position available and student experience each year but they would be  $\geq$ \$13.50/hour (minimum wage). Students must meet the minimum qualifications, sit for an interview, and be 'hired-on' in order to participate in this work experience. Students will work closely with a mentor and supervisor to ensure that they are properly trained on and adhere to local, state, and federal regulations covering the work and the workplace.

We are prepared to offer at least one interview and potential internship or entry level employment position based upon our hiring needs each year. Feel free to contact me for more information about this collaboration between Lamb Weston and WVC.

Sincerely,

Electronic signature-  
Ashley Stucky  
Human Resources  
Lamb Weston  
509-794-2382



December 14, 2020

Attention: Dr. Joey Walter  
Wenatchee Valley College  
1300 Fifth Street  
Wenatchee, WA 98801

Dear Dr. Walter;

I am writing in full support of the Wenatchee Valley College Baccalaureate of Applied Science Engineering Technologist (BAS-ET) Career Launch Endorsement proposal. As the regional co-lead for the Career Connect Washington Initiative, the Apple STEM Network is deeply committed to expanding the Career Launch opportunities for youth in North Central Washington, and have enthusiastically agreed to support the development of this pathway.

As noted in the program application, there is growing industry demand in North Central Washington for industrial design, engineering, and systems integration skill sets. WVC has been collaborative and intentional in the design of their BAS-ET program to meet these employer needs. They have diligently recruited new industry and business partners in the past year, to ensure that students have access to paid work experiences, in addition to the credential, through the proposed Career Launch program.

The WVC BAS-ET program as previously approved, included a cooperative worksite learning experience to be completed during the final year of the program. In seeking the Career Launch endorsement, WVC demonstrates their ongoing commitment to expanding equitable opportunities for students through the addition of paid work experiences for youth, targeted and strategic outreach to ensure equitable opportunities for underrepresented youth, and students support services like mentorship, advising and many other specific services (i.e. transportation, childcare, healthcare, etc.).

In partnership with the North Central Career Connect Washington Network, WVC has also developed recruitment strategies and collaborations with local school districts over the last year to raise student awareness about this development path, and we are committed to supporting the program in the future through extended partnership in outreach and engagement activities for youth.

Regards,

*Sue Kane*  
Dr. Sue Kane

Director of STEM Initiatives and Strategic Partnerships  
Co-Director, Apple STEM Network  
North Central Education Service





December 21, 2020

To: Scott Copeland, Associate Director for Campus Support, State Board for Community and Technical Colleges

Subject: Endorsement of Wenatchee Valley College BAS-ET Career Launch Application

As a critical partner in the Career Connected learning effort in North Central Washington, SkillSource is pleased to support Wenatchee Valley College's application for the BAS-Engineering Technology Career Launch.

WVC's four-year engineering program has created a viable locally-based pathway for individuals to earn a bachelor's degree in a highly desirable STEM-related career field. The proposed Career Launch will give these aspiring electrical and electronic engineers valuable work-based learning to complement their classroom instruction. This will not only improve their readiness and competitiveness for employment upon graduation, but will also benefit local employers who will have access to a greater talent pool.

The WVC program also benefits from above-average Latinx representation (over 30% BAS-ET enrollment compared to 14.1% Latinx engineering employment in North Central Washington and 4% statewide). We support and applaud WVC's efforts for inclusion and diversity in this and other STEM careers.

Thank you for your consideration.



Dave Petersen  
Executive Director