

Bellingham Technical College

# Advanced Manufacturing



Industrial Maintenance & Mechatronics

Instrumentation & Control

Machining

Process Technology

Welding & Fabricating Technology

**Bachelor of Applied Science (BAS)**

Operations Management

**FORGE YOUR  
OWN PATH**  
[www.btc.edu](http://www.btc.edu)



2023/24

# FORGE YOUR OWN PATH



[www.btc.edu/AdvancedManufacturing](http://www.btc.edu/AdvancedManufacturing)

*You know you have the potential to do more with your life. In BTC's Advanced Manufacturing programs, you found a two-year degree in a field with high wages and the flexibility to take you anywhere you want to go.*

## **Advanced Manufacturing**

- Industrial Maintenance & Mechatronics
- Instrumentation & Control Technology
- Machining
- Process Technology
- Welding & Fabrication Technology

**Bachelor of Applied Science (BAS):**  
Operations Management

***Mechanical aptitude or an interest in the math, science, and technology of the manufacturing process.***

### **➤ Practical & Professional**

*Your learning goes beyond the classroom, with immersive labs, high-tech equipment, internships and instructors with industry experience.*

### **➤ Built-in Community**

*BTC's Advanced Manufacturing programs offer small classes, so you'll build a supportive community of classmates and get plenty of one-on-one time with instructors.*

### **➤ Return on Investment**

*With strong financial support for students and shorter certificates and two-year degrees, you'll graduate with less debt ready to start a high-paying career in manufacturing.*



## About Bellingham Technical College

**Bellingham Technical College** has been training students for in-demand, high-paying careers for more than 65 years. At BTC, the focus is always on our students and helping them succeed. We're proud to have one of the highest graduation rates of all public two-year colleges in Washington state, as well as high job-placement rates for our graduates.

At our vibrant campus in the heart of Bellingham, we educate a diverse population of over 3,700 students in 50 degrees, 41 certificate programs and two bachelor of applied science degrees.

***Bellingham Technical College's mission is to provide student-centered, high-quality professional technical education for today's needs and tomorrow's opportunities.***

BTC students prepare for careers in many areas, including high-demand fields such as advanced manufacturing, engineering, nursing, accounting and more.

Smaller classes mean your instructors really know you, and our lectures are reinforced in the lab, whether it is in a fast-paced kitchen, on the welding floor, or in a salmon hatchery.

**At every step, you'll know that BTC's faculty and employees are here to support you in pursuit of your professional goals.**

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*Bellingham Technical College would like to acknowledge that our service area today is within the usual and accustomed lands of the Lhaq'temish or Xwlemi (Lummi) Nation, and of the Noxws'á?aq (NookSack) Tribe of the Coast Salish peoples, as well as the original territory of the s?éməš (Samish) Indian Tribe. Our respect and gratitude go to our indigenous neighbors, whose care and protection of the land and water continues to this day.*

## BTC's Advanced Manufacturing programs are ideal for students with

***mechanical aptitude or an interest in the math, science, and technology of the manufacturing process.***

Manufacturing is the most diverse sector of the U.S. economy, from the immense variety of goods produced to the technology used to create them. Taking ideas and materials and turning them into valuable products takes highly skilled employees.

**You'll learn skills needed for a career** in high-demand, dynamic industries such as manufacturing, aerospace, biotechnology, and energy, with pathways to BTC's Bachelor of Applied Science (BAS) degree in Operations Management.

**The employment outlook is very strong** for these industries, and students can expect to earn excellent wages. Our graduates are readily employable and are actively recruited by local, regional, national, and international industries.

## BTC Degree Options

### **Associate of Applied Science (AAS) degree:**

A two-year associate degree that allows you to go directly to work in your field.

### **Associate of Applied Science-Transfer (AAS-T) degree:**

A two-year associate degree with transferable general education courses that allows you to either go directly into your field, transfer to a specific program at a four-year college or university, or prepare for your bachelor of applied science degree at BTC.

### **Bachelor of Applied Science (BAS) degree:**

A two-year bachelor's degree that can be added on top of an existing associate degree from an accredited college, or even a previous bachelor's degree.

**Transitioning to BTC:** BTC accepts both traditional and non-traditional credit for equivalency to BTC courses on a case-by-case basis. Contact Admissions at [admissions@btc.edu](mailto:admissions@btc.edu) or call **360.752.8345**

Learn more: [www.btc.edu/transfers](http://www.btc.edu/transfers)

# Industrial Maintenance & Mechatronics

Associate of Applied Science Degree

Program Length: 6 quarters

## Industrial Maintenance & Mechatronics Fundamentals Certificate of Completion

Program Length: 3 quarters

Industrial machine maintenance technicians combine knowledge of mechanical technology, automation, and electrical and electronic circuits to install, repair, and upgrade the high-tech systems relied upon by many industries.

BTC's Industrial Maintenance and Mechatronics program places graduates in solid careers as industrial maintenance technicians, millwrights, or instrument technicians. Demand for skilled workers is strong in high-growth industries such as refining, water treatment, aerospace, advanced manufacturing, pharmaceuticals, and power generation.

As an Industrial Maintenance graduate, you'll possess a broad range of highly sought skills and knowledge. BTC's program will teach you to troubleshoot, maintain, repair, and analyze sophisticated equipment in advanced manufacturing operations. Industrial Maintenance is a great program choice if you want a high-wage career with local employers.



*About 85% of BTC's Industrial Maintenance & Mechatronics students are employed within nine months of graduation. The average annual wage in this field is \$76,149, with an earning potential of about \$100,048 per year.\**





# Instrumentation & Control

Associate of Applied Science Degree

Associate of Applied Science – Transfer Degree

Program Length: 6 quarters

Instrumentation and control technicians install, maintain, repair, and adjust the measuring and controlling instruments that make plants run safely.

This program will prepare you for a career as an instrumentation and control technician for high-tech industries such as power generation plants and refineries, water treatment facilities, chemical manufacturing plants, canneries, aerospace facilities, bio-pharmaceutical plants, semiconductor manufacturing plants, and pulp and paper mills.

You'll learn how to maintain, repair, and troubleshoot instrumentation and control systems in industries that increasingly rely on automation.



*"I chose BTC because from all my research, BTC really had an understanding of what kind of workers the industry needed... What we do here is closely related to what we see out in the field."*

— Steven Oliver, Instrumentation & Control graduate



*The average annual wage in this field is \$75,400, with an earning potential of about \$94,786 per year.\**

# be you



*You've never shied away from a challenge, but the idea of a college degree always seemed out of reach. At BTC, you found affordable technical education to launch your career, with high wages and the flexibility to take you where you want to go. **FORGE YOUR OWN PATH. BE YOU.***



Bellingham TECHNICAL COLLEGE



# Machining

Associate of Applied Science Degree

Associate of Applied Science – Transfer Degree

Program Length: 6 quarters

## Principles of Machining & CNC Operation

Certificate of Completion

Program Length: 3 quarters

## Quality Assurance for Machining

Certificate of Completion

Program Length: 1 quarter

Machinists use their knowledge of mathematics, mechanics, and metals to set up and operate the sophisticated machines used to produce precision parts and instruments. After graduating from BTC's Machining program, you'll be prepared to work right away as a machinist; with experience, you can advance to positions such as journey-level machinist, tool programmer, CNC operator/programmer, or engineer.

You'll learn how to use machines such as manual and Computer Numerical Control (CNC) tools, including lathes, drill presses, and milling machines, and you'll gain skills in blueprint reading, basic CNC programming, and machine processes. Employers who hire graduates from the Machining program include aircraft, boat, and automobile manufacturers, industrial machinery firms, and machine shops.



*About 81% of BTC Machining students are employed within nine months of graduation. The average annual wage in this field is \$56,181, with an earning potential of about \$80,309 per year.\**

## Process Technology

Associate of Applied Science Degree

Associate of Applied Science – Transfer Degree

Program Length: 6 quarters

### Process Technology

Certificate of Completion

Program Length: 3 quarters

### Water & Wastewater Treatment

Certificate of Completion

Program Length: 3 quarters

Process technicians work in a variety of industries to ensure the safety standards of production and oversee quality for an employer's processes. BTC's Process Technology program will prepare you for a position as a process technician or operator for employers in power generation, refining, manufacturing, and many other industries.

Currently, our primary employers are the four refineries in Whatcom and Skagit counties. Graduates have also gone to work in water treatment, power generation, and manufacturing facilities in our region, across the state, and beyond.

You'll learn how to monitor and control processing equipment, troubleshoot and solve equipment problems, test product quality, and implement safety standards and procedures.

In BTC's Water and Wastewater Treatment certificate, you will learn how to monitor and control processing equipment, troubleshoot and solve equipment problems, test product quality, and implement safety standards and procedures.



*About 75% of BTC Process Technology students are employed within nine months of graduation. The average annual wage in this field is \$102,626, with an earning potential of about \$125,060 per year.\**







About 94% of BTC Welding students are employed within nine months of graduation. The average annual wage in this field is \$66,970, with an earning potential of about \$86,396 per year.\*

## Welding & Fabricating Technology

### General Welding

Associate of Applied Science Degree

Associate of Applied Science – Transfer Degree

Program Length: 6 quarters

### Pipe Specialization Welding

Associate of Applied Science Degree

Associate of Applied Science – Transfer Degree

Program Length: 7 quarters

### Basic Welding Skills

Certificate of Completion

Program Length: 3 quarters

Any industry that creates goods and structures from metal will rely on skilled welders to create strong products, whether in aerospace, automotive, marine or construction fields.

In BTC's state-of-the-art welding and fabrication facility, you'll learn valuable skills that high-wage employers are looking for, from safety practices and blueprint reading to technical skills like metallurgy, MIG, and TIG welding. BTC's hands-on training will prepare you for a welding career in maritime and ship manufacturing, steel manufacturing, refining, and transportation, or with federal, state, or local governments. Students can choose between a general welding degree or specialize in pipe welding.

*"I have teachers that know what they're doing and have that experience, because it makes a difference, especially if they're passionate about what they're teaching... I feel like what they teach you here is what you're really going to use out in the real world."*

— Lindsey Martin, Welding student

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# BTC's Bachelor of Applied Science Degree

## General Information

If you've completed an associate degree from an accredited college, BTC's Bachelor of Applied Science degrees allow you to use your existing degree as the first two years of one of our bachelor's programs, so you can earn your bachelor's degree in two years.

For students interested in getting their associate degree and bachelor's degree at BTC, meet with a college navigator for guidance on choosing your associate degree general education courses. Cohorts for BTC's bachelor's programs start in Fall Quarter, but students can start their program entry requirements at any time.

## Operations Management

### Bachelor of Applied Science Degree

Program Length: 6 quarters

**BTC's fully online, two-year bachelor's degree in Operations Management** is designed to meet the needs of working adults who want to advance their careers. Develop the skills you need to take your career to the next level and train for roles that range from facilities supervisors and managers to VPs and managers of operations in industries such as aerospace, manufacturing, transportation, retail/wholesale, healthcare, IT, and more. Students will learn about operations management tools and techniques, develop their business skills, and apply them to solve practical problems in their chosen industry.

The employment outlook for operations managers and general managers in Washington state is strong and is expected to grow over the next several years.

#### \*Wage & Employment Data Sources

**Earning potential:** Washington State Employment Security Department 2021 Occupational Employment and Wage Estimates ([esd.wa.gov](https://esd.wa.gov)) reflect 2018–21 employment; average annual wage reflects the 50th percentile, and earning potential reflects the 75th percentile of annual wages across Washington state.

Employment data come from the Washington State Board for Community and Technical Colleges and reflect WA/OR employment for students enrolled in BTC between 2017–18 and 2019–20.



*The average annual wage in this field is \$121,921, with an earning potential of about \$158,597 per year.\**

To get started, a one-on-one meeting with our program specialist is required:  
[\*\*bachelorprograms@btc.edu\*\*](mailto:bachelorprograms@btc.edu)



Find more information:

[www.btc.edu/admissions](http://www.btc.edu/admissions)

Admissions & Funding checklist:

[www.btc.edu/admissionsteps](http://www.btc.edu/admissionsteps)

### Apply to BTC

Apply at [www.btc.edu/applyonline](http://www.btc.edu/applyonline) and get your ctcLink ID number.

### Apply for Financial Aid

File the Free Application for Federal Student Aid (FAFSA) if you are a U.S. citizen or eligible non-citizen.

<https://studentaid.gov>.

File the Washington Application for State Financial Aid (WASFA) if you are not eligible to complete the FAFSA.

<https://wsac.wa.gov/wasfa>

For other funding resources, visit:

[www.btc.edu/financialresources](http://www.btc.edu/financialresources)

### Assess Your Starting Point

Degree- and certificate-seeking students need to determine their math and English starting points.

BTC offers multiple options to determine where you start in those classes. Visit: [www.btc.edu/assessment](http://www.btc.edu/assessment)

### Meet Your Navigator & Register for Classes

Students will meet with College Navigators for a mandatory GET Started appointment: navigate Goals, create an Education plan, become Tech ready, and register for classes.

Contact Admissions & Registration to schedule your appointment: [admissions@btc.edu](mailto:admissions@btc.edu) or call **360.752.8345**.

Bellingham Technical College does not discriminate on the basis of race, color, national origin, religion, gender identity or expression, sex, disability, veteran status, sexual orientation, age, or genetic information in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Executive Director for Human Resources, 3028 Lindbergh Avenue, Bellingham, WA 98225, 360.752.8354. BTC publications are available in alternate formats upon request by contacting the Accessibility Resources office at 360.752.8345.

Bellingham Technical College no discrimina en base a raza, color, origen, religión, sexo, discapacidad, militares veteranos dados de baja con honores o estatus militar, orientación sexual o edad en sus programas y actividades. La siguiente persona ha sido designada para manejar las peticiones de información relativas a la no discriminación política: Director ejecutivo de Recursos Humanos, 3028 Lindbergh Avenue, Bellingham, WA 98225, 360.752.8354. Las publicaciones de BTC están disponibles en formatos alternativos a petición, favor de contactar a la Oficina de Servicios de Accesibilidad (Accessibility Resources office) 360.752.8345.



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