“The Center of Excellence for Aerospace and Materials Manufacturing is doing amazing work! They are bringing people together. Industry is receptive, the partnerships are plentiful and best of all, students are getting jobs in the aerospace industry. The CoE completes the circle that is helping Washington’s aerospace industry grow and prosper. I’ve traveled all over the country and have seen the efforts of many institutions. The Center of Excellence for Aerospace and Advanced Materials Manufacturing is among the best. If you want a job in the aerospace industry, Washington is the place to be.”

Celeste Baine
Bio Medical Engineer, Author and Director of Engineering and Education Service Center
www.engineeringedu.com
Education is the key to a strong and vital workforce. Careers in aerospace and advanced materials manufacturing have been available since World War II when aviation literally began to take off. But the field is now much more diverse than piloting a plane to deliver supplies. For anyone who has longed to see the world from space – to the person who is fascinated by how pilots use instruments to control an airplane, this directory is for you!

The Center of Excellence (CoE) offers the state’s technical and community colleges a single and reliable source for industry information and education, and strives to place a highly-skilled workforce within the aerospace and advanced manufacturing industry.

This field is diverse and ever expanding.

- Aerospace
- Advanced Manufacturing
- Defense
- Electronics
- Information Technology
- Robotics
- Aviation
- Composites
- Drafting
- Fabrication
- Mechanical Engineering
- And much more...

Housed at Everett Community College, the Center of Excellence for Aerospace and Advanced Materials Manufacturing unites students, business leaders and instructors working in the fields of aerospace and advanced materials manufacturing. We are a focal point for customized training and services. This directory includes Washington State based educational opportunities in this industry. It is your one-stop location for industry and educational information regarding aerospace and advanced materials manufacturing. You will be surprised by the options available in aerospace and advanced materials manufacturing.

Mary Kaye Bredeson
Director
Center of Excellence for Aerospace and Advanced Materials Manufacturing
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Paine Field, Everett, WA 98204
Main: 425-388-9987
Cell: 425-359-0114
www.a2m2.net
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ELECTRONICS ENGINEERING TECHNICIAN

Program Description
Students prepare for entry-level employment as technicians in the field of electronic engineers.

Skills Covered by Program

Career Options
Work with electronic engineers, consultants, manufacturers, and research and development teams

Degrees Offered
• Associate of Technology

Specializations/Certificates
• N/A; however, students are encouraged to take the National Institute for Certification in Engineering Technologies (NICET) examinations and seek certification as Electronic Engineering Technicians.

Contact Information
Wayne Caldwell
253-680-7464
wcaldwell@bates.ctc.edu

ELECTRICAL POWER & PROCESS AUTOMATION/ELECTRONICS TECHNICIAN

Program Description
The Electrical Power and Process Automation program prepares students for apprenticeships with electric utilities by offering both a one-year Electrical Technician certificate and a two-year Industrial Technology degree. The program features equipment and software from industry leaders such as Allen Bradley, Rockwell Automation, FANUC Robotics, Bosch, Siemens, Famic Technologies, and National Instruments. The automation portion of the program focuses on the intelligent control of machines and processes using programmable logic controllers (PLCs), embedded controllers, variable frequency drives (VFDs), industrial networks, sensors & transducers, instrumentation and robotics. The electrical curriculum is based on guidelines from the National Joint Apprenticeship Training Committee (NJATC) for electrical trades. The program also offers in-depth career training for those interested in becoming an electronics technician in the manufacturing, scientific, aerospace, or civilian military industries.

Skills Covered by Program
AC & DC Circuit Analysis; Motor & Control Systems; Digital Logic; Programmable Logic Controllers; Supervisory Control & Data Acquisition (SCADA); Industrial Networks.

Career Options
Apprentice; Electronics Technician in the manufacturing, scientific, aerospace, or civilian military industries.

Degrees Offered
• Associate of Technology

Specializations/Certificates
• Certificate of Competency – Electrical Technician

Contact Information
Jean Watley
253.680.7292
jwatley@bates.ctc.edu

ELECTRONICS TECHNICIAN

Program Description
Successful completion of coursework in the electronics technician program qualifies graduates to use precision test equipment and hand tools to install, maintain, test, and repair electronic equipment in a broad range of careers. Students also prepare for Certified Electronic Technician (CET) testing.

Find us on: Facebook Twitter www.bates.ctc.edu
Skills Covered by Program
Introduction to Electronics; AC & DC Circuits; Analog & Digital Circuits.

Career Options
A variety of career options are available including: manufacturing, communications, information technologies and computers, electronic security, avionics, and defense.

Degrees Offered
• CT

Specializations/Certificates
• N/A

Contact Information
Jean Watley
253-680-7292
jwatley@bates.ctc.edu

MACHINIST

Program Description
Machinists produce precision parts, tools, and instruments utilizing both manual and computerized fabrication systems. Students prepare for apprenticeship with instruction that includes extensive hands-on experience in the use of traditional precision tooling and machining equipment, as well as sophisticated, state-of-the-art equipment including Haas lathes, the Visual Quick Code Probing System and CG Tech software. This is a pre-apprenticeship program for the Tacoma Machinists Joint Apprenticeship Training Committee. The program also provides extended learning opportunities for persons previously or currently employed in related professions.

Skills Covered by Program
Industrial Safety; Lathe Operations; Grinding; Milling; Geometric Dimensioning & Tolerancing; Beginning and Advanced Machining; Beginning and Advanced CNC Machining; Blueprint Reading; MasterCam/Solidworks; CNC Lathe and Mill

Career Options
Machinist, Toolmaker, Tool and Die Maker, Inspector, Planner, Moldmaker, and Shop Foreman. Some will become machine shop owners; Apprentice

Degrees Offered
• Associate of Technology

Specializations/Certificates
• Certificate of Competency – Manual Machining

Contact Information
Lynn Strickland
253-680-7029
lstrickland@bates.ctc.edu

MANUFACTURING, CNC MACHINING & ENGINEERING

Program Description
This course introduces students to the machine manufacturing environment. Students gain familiarity with the various equipment found within a machining environment, the materials used in machine manufacturing processes, maintenance of the work area, and how to conduct themselves within the shop—with an emphasis on safety and professional conduct. Additionally, students gain an understanding of precision and how it is applied to modern machine manufacturing.

Skills Covered by Program
Geometric and GDT; Precision Measurement and Layout; Machining; CNC Systems and Controls; Programming & Troubleshooting; Options for: CNC Lathe & Milling; Computer-Aided Manufacturing; Plastic Mold Manufacturing; Electronic Fundamentals and Applications; Microcontrollers; Basic Robotics.

Career Options
CNC Machinist in all types of factories, industries, and maintenance shops

(Program information continues on the next page)
MECHANICAL ENGINEER

Program Description
Students prepare for careers and engineering technicians with an emphasis on mechanical systems.

Skills Covered by Program
Main focus is on Computer-Aided Drafting and Design (CADD).

Career Options
Students have the opportunity to work on community and college projects that may include patent application drawings and detailed machine ship production drawings.

SHEET METAL TECHNOLOGY

Program Description
Bates offers the only program in the region that prepares students for apprenticeship employment in the sheet metal industry. Customer projects completed in the classroom, shop, and the field, provide students with the necessary foundational skills to succeed in this high demand and rewarding occupation. This is a pre-apprenticeship program for the Western Washington Sheet Metal Joint Apprenticeship Training Committee. Students who complete all required elements of the selected Sheet Metal Technology course offerings will be awarded direct entry into the Western Washington Sheet Metal JATC Local 66 building trades or residential apprenticeship program. Students will be placed at the end of the out-of-work list. Prior educational credits are recognized upon entrance into the apprenticeship.

Skills Covered by Program
Equipment operation; fabrication and installation of various ventilation systems; blueprint reading; lay-out drafting; computer-aided drafting; air distribution, energy codes; and material handling.

Degrees Offered
• Associate of Technology

Specializations/Certificates
• Certificate of Competency – Sheet Metal Technology
• Certificate of Competency – Sheet Metal Technician
• Certificate of Training – Sheet Metal Production Support

Contact Information
Kris Manning
253-680-7408
kmanning@bates.ctc.edu
ELECTRICIAN

Program Description
The Electrician Program prepares students for the Electrical Industry, including residential, industrial, and commercial jobs. The Program emphasizes the development of electrician skills along with communication and interpersonal skills to be successful at the workplace. The curriculum starts with basic math and electrical theory and advances to complex systems building upon the knowledge and skills acquired throughout the Program. Classroom instruction and practicum/lab instruction provide opportunities for students to achieve the competencies they need to maintain existing electrical install systems, perform new electrical construction, and perform other electrical jobs. Graduates applying to the Department of Labor and Industries for a specialty electrical license can be credited with supervised work experience per RCW 19.28.191 and WAC 296-46B-940 as follows: Residential (02)-1,550 hours of work experience or Nonresidential Maintenance (07)-1,550 hours of work experience.

Skills Covered by Program
Graduates will:
• Design, analyze, and diagnose basic electrical systems through the application of electrical theory fundamentals
• Ensure safe work practices and installations through compliance with national, state, and local regulations and industry standards including the National Electrical Code and WAC/RCW
• Use proper tools and test equipment to construct and maintain power, lighting, signaling, and control systems in residential, commercial, and industrial settings
• Install new and modify existing electrical systems and components utilizing appropriate wiring methods and materials
• Estimate costs of labor and material for small electrical projects
• Exhibit professional and personal conduct and appearance appropriate to the workplace
• Communicate clearly with team members, supervisors, and others in the workplace, effectively using oral communication as well as drawings, blueprints, and other documents

Career Options
Apprentice Electrician, Journeyman Electrician, Electrical Contractor, Electrical Equipment Technician, Maintenance Electrician, Television Cable Technician, Utility Company Technician, Telephone Technician And Electrical Equipment Salesperson

Degrees Offered
• Associate in Applied Science Electrician

Specializations/Certificates
• Electrical Fundamentals

Contact Information
James Lee
360-752-8420
jlee@btc.ctc.edu

ELECTRO MECHANICAL TECHNOLOGY

Program Description
The Electro Mechanical Technology (EMTEC) Program prepares students with the knowledge and skills required for success as an Industrial Maintenance Technician (often referred to as Millwrights or Stationary Engineers). This Program will appeal especially to students who want a broad knowledge about various industrial processes including electricity, hydraulics, pneumatics, engineering graphics, welding, boilers, etc. The EMTEC Program uses hybrid online instruction, classroom lectures and labs. Graduates will have the opportunity to work in a variety of industrial settings including advanced manufacturing operations—particularly petrochemical, refining, pharmaceuticals, chemical, value-
added wood products, pulp and paper, power generation, utilities, and wastewater treatment facilities, as well as the opportunity to work in smaller facility maintenance.

Skills Covered by Program
Graduates will:

• Design, analyze, and diagnose basic electrical systems through the application of electrical theory fundamentals.
• Design, analyze, and diagnose basic industrial mechanical systems through the application of hydraulic, pneumatic, lever and pulley theory fundamentals.
• Ensure safe work practices and installations through compliance with federal, state, and local regulations and industry standards including the National Electrical Code, WAC Chapter 296 and related RCW.
• Use proper tools and test equipment to construct and maintain power, lighting, signaling, and control systems in industrial settings.
• Use proper tools and test equipment to construct and maintain mechanical systems in industrial settings.
• Install new and modify existing process systems and components utilizing appropriate electrical and millwright/mechanical skills and materials.
• Exhibit professional and personal conduct and appearance appropriate to the workplace.
• Communicate clearly with team members, supervisor, and others in the workplace, effectively using oral communication as well as drawings, blueprints, and other documents.

Career Options
Millwright; Assembler; Maintenance Mechanic; Maintenance Millwright; Manufacturers Service Representative; Automated Equipment Engineer-Technician; Machine Erector, Installer, Mover, and Dismantler

Degrees Offered
Associate in Applied Science Electro Mechanical Technology

Specializations/Certificates
• Electrical Fundamentals, Electro Mechanical Technology

Contact Information
Rob Costello
360-752-8317
rcostell@btc.ctc.edu

ELECTRONICS

Program Description
Electronics Program graduates work primarily as technicians or engineer technicians in a variety of industries including electronic equipment, opto-electronic equipment, manufacturing, computer systems, cable or satellite TV, broadcasting, and microwave technology. Typical tasks include installing, maintaining, and repairing electronic equipment such as communications equipment, radar, industrial equipment controls, computers, telephone systems, and fiber optic equipment.

Skills Covered by Program
Successful Program graduates will:

• Demonstrate competency in electrical/electronic safety, direct current, alternating current, basic test equipment, semiconductors, op-amps, digital systems, opto-electronics (photonic and fiber-optic), and troubleshooting

Career Options
Electronics technicians in manufacturing, computer servicing, mobile two-way radio servicing, telephone and wireless communication servicing, and biomedical equipment servicing. Potential positions include electronic equipment technician, biomedical technician, manufacturing technician, general electronics technician, computer systems
Center of Excellence for Aerospace and Advanced Materials Manufacturing

repair technician, cable or satellite TV technician, technical writer, technical sales, engineering or engineers assistant, field service technician, broadcast technician and microwave technician.

**Degrees Offered**
• Associate in Applied Science Electronics

**Specializations/Certificates**
• N/A

**Contact Information**
Dave Starkovich
360-752-8416
dstarkovich@btc.ctc.edu

**INSTRUMENTATION AND CONTROL TECHNOLOGY**

**Program Description**
The degree in Instrumentation & Control Technology prepares students for employment to maintain, repair, and troubleshoot instrumentation and control systems in such industries as petroleum refining, pulp and paper, pharmaceuticals, aluminum, food processing, chemical manufacturing, semiconductor manufacturing, and power generation. A combination of theory and hands-on training offers a variety of modern process measurement and control instrumentation with actual working processes and computer simulations. The Program applies math and physics and duplicates conditions and industry standards that technicians experience. Approximately half of the instructional time is laboratory experience to develop knowledge and skills with electronic circuits, test equipment, individual instruments, multiple instrument control systems, and practical computer applications. BTC's Instrumentation & Control Technology Program is an active member of the Industrial Instrumentation & Controls Technology Alliance (IICTA). This is an organization with educational and industry partners across the nation. The IICTA’s mission is to “promote the partnership of education, industry and businesses in developing activities to assure the existence of a sufficient quantity of highly qualified instrument & controls technicians who are highly sought after by the industry.” These activities include: setting educational standards, promoting networking, and providing funding for scholarships and programs.

**Skills Covered by Program**
Graduates will:
• Demonstrate basic knowledge and critical thinking in the field of Instrumentation and Control.
• Be able to design, build, and test functioning AC, DC, semiconductor, analog, and digital electronic circuits.
• Be able to demonstrate basic troubleshooting skills and apply basic computer application Skills.

**Career Options**
Instrumentation and process control technicians in bio-pharmaceutical manufacturing facilities, oil refineries, food processing, pulp/paper mills, power plants, metal smelters, systems integrators, research and development or water/sewage treatment facilities. Opportunities also exist in medical instrumentation, chemical plants, canneries, aerospace, sales and communications.

**Degrees Offered**
• Associate in Applied Science Instrumentation and Control

**Specializations/Certificates**
• N/A

**Contact Information**
Tony Kuphaldt
360-752-8477
tkuphald@btc.ctc.edu

(Program information continues on the next page)
MECHANICAL ENGINEERING

Program Description
The degree in Mechanical Engineering Technology is based on engineering theory with specialized applications in manufacturing, process piping, structural detailing, and engineering drawing and design. Coursework provides multi-level training in Computer Aided Drafting (CAD) and solid modeling using specialized 3D graphics software. Knowledge of national drawing standards and common industry practices are acquired through instruction and class projects, providing the necessary background for transferring skills to specific industrial design projects. A wide variety of companies employ graduates, including structural engineering companies, architectural firms, commercial and residential construction firms, petroleum refineries, equipment wholesalers/distributors, and numerous manufacturing industries such as: electronics, aircraft, industrial equipment, and wood products (e.g., truss, cabinet, door, and furniture manufacturers).

Skills Covered by Program
Graduates will:

• Develop a parametric solid model of an existing assembly or one of their own design, and then create a set of working drawings including exploded assembly views and dimensioned individual part drawings. They will demonstrate proficiency in using CAD software command functions to generate engineering drawing.

• Be able to create fully dimensioned orthographic and isometric CAD drawings (of various machine parts) that adhere to national standards and industry conventions.

• Be able to design and evaluate the stress, strain, and deflection levels of engineering components subjected to deformations, axial loads, and shear loads. They will apply static’s principles including force equilibrium and force resultants to determine the member forces for structural elements that comprise trusses, machines, and frames.

• Be able to apply knowledge of various pipes, fittings, connections, and process piping equipment (such as valves, pumps, tanks, etc.) to draft single line, double line, and isometric depictions of industrial piping systems. They will demonstrate the ability to understand and interpret structural steel framing plans and detail all structural steel beams for a single floor level according to AISC specifications.

Career Options
Aerospace industry, petrochemical industry, industrial manufacturing, engineering consulting and design firms, engineering software development and support companies, and electrical contractors. Potential positions include mechanical engineering technician, mechanical drafter, computer aided drafter, engineering technician, production planner, machine maintenance technician, mechanical testing & quality control technician and sales representative.

Degrees Offered
• Associate in Applied Science Mechanical Engineering Technology

Specializations/Certificates
• Mechanical Engineering Drafting

Contact Information
Scott Reiss
360-752-8424
sreiss@btc.ctc.edu
PRECISION MACHINING

Program Description
The Precision Machining Program provides students with employment skills in the Computerized Machining Industry. The degree includes CAD/CAM, theory, and related academic skills for continued success in the machine trades. In addition to the degree, the Program offers a Machine Operator certificate and a CNC Operator certificate. BTC is a Master CAM Training site with state-of-the-art Computer Numerical Control (CNC) machining equipment.

Skills Covered by Program
Graduates will:
• Demonstrate competency in their ability to operate machine shop equipment: lathes, mills, grinders, and drills
• Demonstrate competency in their ability to read and interpret blueprints per industry standards
• Successfully demonstrate their ability to process and plan a piece part through the lab until completion
• Demonstrate competency in CNC machine tool operation and programming
• Demonstrate competency in CAM design and manufacturing

Career Options
Journey level machinist, tool programmer, CNC operator/programmer, manager, engineer and machine and shop tools sales and service representative. In addition, some graduates are self-employed. Around the country, most machinists work in small machining shops or in manufacturing firms that produce durable goods, such as metalworking and industrial machinery, aircraft, or motor vehicles.

Degrees Offered
• Associate in Applied Science Precision Machining

Specializations/Certificates
• CNC Operator, Machine Operator

Contact Information
Tim Martinson
360-752-8406
tmartinson@btc.ctc.edu
AVIATION MAINTENANCE TECHNOLOGY

Program Description
Moses Lake, a growing community of approximately 21,000, is located near the geographic center of Washington State in a region surrounded by outdoor recreational opportunities.

The Big Bend Community College campus includes 25 buildings on 153 acres adjacent to the Grant County International Airport. This world class airport is one of the largest and best equipped in the western United States.

Big Bend’s AMT instructors have extensive backgrounds in the aviation field. Contained in their résumés of experience are: FAA mechanic examiner, FAA inspection authorization, shop foreman, general aviation maintenance, regional airline maintenance and commercial airline maintenance. All instruction is provided in a large newly-remodeled hangar and the program’s inventory contains several aircraft and a variety of engine types including turbines and jets.

Upon completion of the AMT program course of study, the student will have earned a minimum 400 hours of classroom and laboratory training in the AMT general section, 750 hours in airframe and 750 hours in powerplant. The FAA recognizes these time allotments as sufficient to meet testing requirements. Upon successful completion of the FAA written tests for certified aviation maintenance technician, the student is then eligible to take the oral and practical tests, all of which may be taken at BBCC.

The BBCC Aviation Maintenance Technology program is approved by the Washington State Aeronautics Commission and the Federal Aviation Administration.

Skills Covered by Program
Airframe and Power plant

Career Options
• Careers as an Aircraft Technician

Degrees Offered
• AAS

Specializations/Certificates
• Airframe Maintenance Technician
• Powerplant Maintenance technician
• Aviation Maintenance – General
• Airframe Mechanic I
• Airframe Mechanic II
• Powerplant Mechanic I
• Powerplant Mechanic II
• Powerplant Mechanic III

Contact Information
Dan Moore or Erik Borg
509-793-2254 509-793-2253
amt@bigbend.edu

Find us on: www.bigbend.edu
INDUSTRIAL ELECTRICAL

Program Description
To prepare students for entry-level employment as maintenance mechanics in several industries, the Industrial Systems Technology (IST) program provides a foundation in safety, fabrication, welding, refrigeration, machining, power transmission, industrial electricity, fluid power, programmable logic controllers, and instrumentation. Maintenance mechanics install new industrial machinery and systems, maintain and repair equipment, and perform tests on machinery and equipment to ensure safe operation.

Skills Covered by Program
Students apply technical knowledge and skills to install, repair, and maintain industrial machinery and equipment such as motors, pumps, pneumatic tools, conveyor systems, production machinery, pipeline distribution systems, and automated equipment. Training is offered in: diagnostic techniques, trouble shooting, use of test instruments, principles of preventive and predictive maintenance, mechanics, pneumatics, hydraulics, refrigeration, electricity, and electronics as they relate to maintenance mechanics. Related instruction includes mathematics, first-aid, written and oral communication, and human relations.

Career Options
Our mission is to prepare students for entry in the world of industrial electricity, with a thorough understanding of electrical safety, and safe practices.

Degrees Offered
• Associate of Applied Science

Specializations/Certificates
• Basic Electricity
• Electronics
• Industrial Electricity
• Instrumentation
• Programmable Logic Controllers

Contact Information
Jerry Wright
509-793-2265
jerryw@bigbend.edu

www.bigbend.edu
Find us on: www.bigbend.edu

Big Bend Community College
7662 Chanute St
Moses Lake, WA 98837
AUTOMATION MAINTENANCE TECHNICIAN

Program Description
This program is designed to prepare students for occupations installing and replacing electric motors, replacing and repairing electronic sensors, working with pneumatic devices, doing simple programming of Programmable Logic Controllers and servicing production lines centered around conveyor systems.

Skills Covered by Program
- Soldering and cabling
- DC and AC electronics
- Sensor technology, mechanical systems, solid state devices, automation, computer electronics, and robotics.

Career Options
- N/A

Degrees Offered
- N/A

Specializations/Certificates
- Certificate of Proficiency

Contact Information
Dave LaLond
360-736-9391 ext. 282
dlalond@centralia.edu

ELECTRONICS, ROBOTICS, AND AUTOMATION

Program Description
The goal of this program is to provide a graduate with the skills needed to find a job at a company that uses high-end automation equipment. This equipment ranges from devices controlled by programmable logic controllers (industrial computers) to robotic devices. A successful student will have learned core electronics skills, characteristics and operation of various types of electric motors, pneumatics and embedded controllers. In modern production facilities the plant is often under the control of machinery connected with Ethernet, DeviceNet or ControlNet so this program has a strong component which includes computers and computer networking.

Skills Covered by Program
- Use electronic test equipment: digital multi-meters, oscilloscopes, function generators, power supplies.
- Troubleshoot series, series-parallel circuits, and circuits with active components.
- Program robotic arms and autonomous robots.
- Hook up motor controller circuitry such as magnetic motor starters.

Career Options
- N/A

Degrees Offered
- Associate in Applied Science

Specializations/Certificates
- N/A

Contact Information
Dave LaLond
360-736-9391 ext. 282
dlalond@centralia.edu
MACHINE TECHNOLOGY

Program Description
The machinist’s craft is basic to all American industrial production. It is the machinist’s task to interpret the engineer’s drawings in order to fabricate new machines and products. Machinists operate various types of material-removing equipment such as lathes, milling machines, grinders, and computerized numerical control (CNC) machines. Some machinists specialize in the operation of one type of machine while others work in a shop where they are required to perform equally well on several different machines. Clark College’s program offers instruction in numerous machine processes including the set-up and operation of the engine lathe, surface grinders, cylindrical grinder, horizontal and vertical mill, CNC lathes, EDM and milling machines. All shop theory subjects have a direct bearing on the student’s skill, safety, and attitude. In addition to shop theory and practice, the student studies math, blueprint reading, metallurgy, safety, and computer-aided manufacturing (CAM) programming. MasterCAM programming classes teach basic CAM programming for mills, lathe, EDM, etc. The basic CNC class involves writing programs and learning to safely operate the HAAS CNC mills.

Skills Covered by Program
Manual machine operations through CNC

Career Options
• Any machining (manual or CNC) in the trade

Degrees Offered
• AAS – AAT

Specializations/Certificates
• Certificate of Proficiency

Contact Information
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MECHATRONICS

Program Description
Mechatronics technology is a complex interdisciplinary field that combines the study of mechanics, electronics, automation and computers. Students in a Mechatronics technology degree program will be prepared to work with electromechanical and automated equipment to create industrial and commercial products. The most popular Mechatronics technology degree program is an associate’s degree, but bachelor’s degrees in Mechatronics engineering technology are also common. An AAT in Mechatronics technology program teaches students the latest technologies and skills required by manufacturers. Students receive instruction in the installation, troubleshooting and maintenance of electromechanical equipment and manufacturing machinery. The curriculum focuses on the technical aspects of the profession in addition to incorporating technical writing, critical path analysis and advanced mathematics classes.

Skills Covered by Program
• All facets of manufacturing
• Career options
• Any field in manufacturing/automation and control systems

Degrees Offered
• AAT

Specializations/Certificates
• Certificate of completion and Certificate of Proficiency

Contact Information
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AEROSPACE COMPOSITE TECHNICIAN

Program Description
The Aerospace Composite Technician certificate is a two-quarter program designed to prepare students to fabricate, assemble and repair composite materials on aircraft. The knowledge and skills gained through this program are those required for entry-level positions as composite technicians. The certificate also provides an opportunity for existing aircraft mechanics and service technicians to expand their education in the field of composite assembly and repair.

Skills Covered by Program
• Composite fabrication
• Composite assembly
• Composite repair
• Basic mathematics, basic physics, & weight & balance
• Materials processes
• Non-metallic structures

Career Options
Composite repair, assembly or manufacturing in a variety of industries.

Degrees Offered
Students may choose to pursue a degree through the Aviation Maintenance Technician program

Specializations/Certificates
This is a 2-quarter certificate specializing in Composite fabrication, assembly, and repair.

Contact Information
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AVIATION MAINTENANCE TECHNICIAN

Program Description
This FAA approved program is designed to prepare students for entry-level positions in the Aircraft Maintenance industry. Graduates will meet Federal Aviation Administration (FAA) requirements for the issuance of Airframe and Powerplant certificates. Aviation Maintenance technicians are qualified to perform service or make repairs on all types and sizes of private and commercial aircraft including airplanes, helicopters, and their propulsion systems. Related fields include aircraft and component manufacturing. Students are eligible for FAA certification upon completion of the required technical credits.

Skills Covered by Program
The full range of airframe and powerplant skills designated by the FAA for issuance of these certificates.

Career Options
Graduates will meet FAA requirements for the issuance of Airframe and Powerplant certificates. Aviation Maintenance Technicians are qualified to perform service or make repairs on all types and sizes of private and commercial aircraft including airplanes, helicopters, and their propulsion systems. Related fields include aircraft and component manufacturing.

Degrees Offered
• Associate of Applied Technology (AAT)
• Associate of Applied Science – T (AAS-T)

Specializations/Certificates
• Airframe Maintenance Technician Certificate
• Powerplant Maintenance Technician Certificate

Contact Information
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MANUFACTURING TECHNOLOGIES

Program Description
This program provides students with the knowledge and skills necessary for employment in the manufacturing/metalworking industry. Graduates may enter industry as a machinist, machinist apprentice or machinist helper. Students are responsible for setting up and operating conventional machine tools and CNC (Computer Numerical Control) machine tools.

Advanced students will be proficient in programming, setting up, and operating CNC machining centers. Students will develop proficiency in blueprint reading, shop math, precision measuring, CAD/CAM (Computer-Aided Drawing & Computer-Aided Machining), and CNC (Computer Numerical Control) turning centers and milling machines.

Skills Covered by Program
• Shop Math/Blueprint reading
• Shop Machines and Tools
• Lathes & Mills
• Surface Grinding
• Tool & Cutter Grinding
• Computer Numerical Control (CNC) – beginning through advanced operations
• Inspection Techniques
• Metallurgy & Heat Treatment
• Manufacturing Resources

Career Options
Machinist, Machinist apprentice, Machinist helper, CNC operator, CNC programmer

Degrees Offered
• Associate of Applied Technology (AAT)

Specializations/Certificates
• Machinist Apprentice
• Machinist Helper

Contact Information
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MATERIAL SCIENCE: NONDESTRUCTIVE TESTING AND MATERIAL SCIENCE: COMPOSITES

Program Description
The Material Science program at Clover Park Technical College offers a two-year Associate of Applied Science – T (AAS-T) degree, as well as shorter certificates, for students seeking entry into or career advancement in the materials technology job market, specifically in the areas of nondestructive testing and composites technology. The program is designed to prepare students for careers in areas such as nondestructive testing technician, nondestructive testing specialist, composite technician, or engineering support technician. Students already working in the materials science field can select electives and a study path designed to expand their skills and further their employment potential. The Materials Science degree is designed to provide hands-on technical training that will prepare students for careers, as well as prepare graduates for further study in the field. This program also provides opportunity for the incorporation of credit from prior learning in industry or government.

Skills Covered by Program
• Introduction to nondestructive testing
• Visual and optical testing
• Magnetic particle testing

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Skills Covered by Program (Continued)
• Eddy current testing, Ultrasonic Testing, Radiographic testing
• Composite fabrication, assembly, and repair
• Fundamentals of metallurgy
• Manufacturing processes
• Blueprint reading and sketching
• Codes and specifications
• Principles of troubleshooting

Career Options
Nondestructive Testing Technician, Nondestructive Testing Specialist, Composite Technician, Material Engineering Technician, Engineering Support Technician

Degrees Offered
• Associate of Applied Science –T (AAS-T) in the following areas:
  • Material Science – Nondestructive testing
  • Material Science – Composites

Specializations/Certificates
• Ultrasonic Testing
• Radiographic Testing
• Eddy Current Testing
• Magnetic Particle & Liquid Penetrant Testing

Contact Information
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PROFESSIONAL PILOT

Program Description
The professional pilot program prepares students to meet the requirements for a commercial pilot certificate issued by the Federal Aviation Administration (FAA).

Skills Covered by Program
• Private pilot knowledge and skills
• Instrument pilot knowledge and skills
• Commercial pilot knowledge and skills
• Flight instructor knowledge and skills

Career Options
Students graduating from this course usually begin their careers as flight instructors. After working as a flight instructor for one to two years, most progress into charter flight, corporate flying, and commuter or major commercial airlines.

Degrees Offered
• Associate of Applied Technology (AAT)
• Associate of Applied Science –T (AAS-T)

Specializations/Certificates
• Private Pilot
• Instrument Pilot
• Commercial Pilot
• Flight Instructor

Contact Information
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ENGINEERING TECHNOLOGY

Program Description
The Engineering Technology curriculum prepares students to work on a variety of engineering teams in several supportive functions. Graduates may specialize in mechanical, architectural, electrical, chemical, civil and construction engineering.

Skills Covered by Program
• Demonstrate proficiency with computer-aided drafting techniques.
• Complete field surveying projects.
• Use engineering calculations for statics, strength of materials, structures and electricity related problems.
• Apply construction estimation and specification concepts.
• Demonstrate teamwork on architectural, mechanical and structural design projects.

Career Options
Engineering Technician, Engineering Assistant, Project Manager Assistant, Construction Manager Assistant, Surveyor, Building Inspector, CAD Operator, Designer

Degrees Offered
• Associate of Applied Science in Engineering Technology

Specializations/Certificates
• Computer-Aided Drafting

Contact Information
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MACHINE TECHNOLOGY

Program Description
The CBC Manufacturing Technology curriculum includes trade support theory courses in conjunction with laboratory training and general education courses.

Skills Covered by Program
• Demonstrate manual machining skills (operation of lathes, milling machines and surface grinders, tools), grinding skills, and blueprint reading skills
• Operate high tech equipment, such as electrical discharge machines and computerized numerical control machine
• Demonstrate skills in computer-aided drafting, solid modeling, and computer-aided manufacturing
• Use math and problem-solving skills

Career Options

Degrees Offered
• Associate of Applied Science in Machine Technology

Specializations/Certificates
• Solid Modeling for Manufacturing

Contact Information
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