

# Advanced Manufacturing Technology Apprenticeship

## GENERAL INFORMATION

Everett Community College offers a number of pathways toward technical careers, using stackable certificates and degrees. The first level, for students seeking entry into the technical world, would be the **Manufacturing Pre-Employment Certificate**, a credential that would allow one to work in entry-level manufacturing. The next level up would be to take classes leading to a **Skills-Oriented Certificate**. And for those seeking a higher level of education and the job skills and responsibilities that go with it, EvCC offers skills-oriented **ATA Degrees**. This Advanced Manufacturing Technology curriculum guide describes all three levels in the Precision Machining discipline. This program also provides a flexible framework for the incorporation of credit from prior learning in industry or government. An early conference with one of the designated advisors is strongly suggested for success.

## THE PROGRAM

The Advanced Manufacturing Technology – Apprenticeship Program is part of a cluster of programs. Five **Associate in Technical Arts degrees** and nine **certificates in Advanced Manufacturing Technology** are offered, and may be pursued on a full-time or part-time basis at Everett Community College (EvCC).

### ATA degree Programs (all are 90 credits):

- **Advanced Manufacturing Tech – Precision Machining\***
- **Advanced Manufacturing Tech – Apprenticeship**
- **Advanced Manufacturing Tech – Technical Design (CAD)\***
- **Advanced Manufacturing Tech – Composites\***
- **Advanced Manufacturing Tech – Welding and Fabrication\***

### Certificate Programs :

- **Manufacturing Pre-Employment (12 credits)\***
- **Precision Machining (40 credits)\***
- **Engineering Technology (CAD) (39 credits)\***
- **CATIA v5 (27 credits)\***
- **Composites (31 credits)\***
- **Welding and Fabrication (43 credits)\***
- **Mechatronics (19 credits)\***
- **Introduction to Composites (5 credits)\***
- **Introduction to Robotics (5 credits)\***

The overall program is designed for maximum flexibility, in that one may choose to take one or two courses to enhance their current skills, or pursue a certificate or degree, depending on their goals. The program outcomes for students pursuing the degree will prepare them to perform the following tasks:

- Solve technical mathematical problems
- Read and understand basic engineering drawings
- Understand and utilize machine technology
- Write programs and setup CNC machines
- Operate and perform maintenance on CNC machines
- Document technical activities in written and verbal reports
- Be prepared for successful employment

\* Described in a separate guide.

Approved February 8, 2018 by Instructional Council

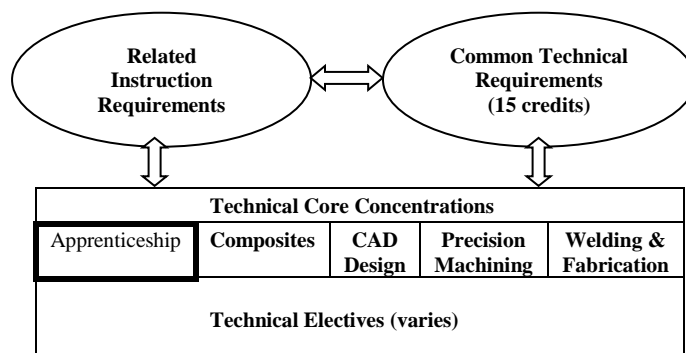
## CREDIT FOR PRIOR LEARNING

Adults with work experience or completion of industry training programs may be eligible for college credit by following “External Credit” evaluation procedures. Students currently in high school may take selected technical courses while in high school and apply at that time for college credit.

External Credit: Contact Enrollment Services  
Call: 425-388-9219  
Tech Prep: [www.everettcc.edu/techprep](http://www.everettcc.edu/techprep)  
Or contact your high school counselor

## THE COURSES

The courses for this program may be divided into four categories: related instruction requirements (15 credits), common technical requirements (28 credits), technical core concentration classes (31 to 40 credits), technical electives (credit varies) and the final capstone class (5 credits). Students seeking an ATA degree will take the number of credits shown in each area plus a number of technical elective classes until the total credit accumulations meets or exceeds the degree requirement. Note that a minimum of 28-40 credits need to come from any one technical concentration to qualify for that particular degree. The actual courses are listed further on in this curriculum guide. See the diagram below for an understanding of how the courses interrelate.



## GETTING STARTED AT EVCC

Our Enrollment Services Office provides information about application, advising, orientation and registration for new and continuing students. Students interested in the program should talk to an advisor prior to selecting classes for the first quarter:

Advising	425-388-9339
Enrollment Services	425-388-9219
Apprenticeship (Darin Chase)	425-388-9390
Precision Machining (Darin Chase)	425-388-9390
CAD (David Primacio)	425-267-0160
CAD (Sean Auger)	425-388-9534
Welding (Robert White)	425-388-9457
Welding (Karl Fulton)	425-388-9447
Composites (Michael Patching)	425-388-9092

# ATA Degree: Advanced Manufacturing Tech –Apprenticeship

The courses required for an **Associate in Technical Arts Degree in Advanced Manufacturing Tech – Apprenticeship**, are listed below. Students should meet with an advisor and maintain this checklist while at Everett Community College. The quarter before expected completion, this checklist should be submitted with a diploma application to the Enrollment Services Office. EvCC does not offer every course each quarter, so please consult a class schedule and an advisor to plan course selections. Note that to earn this degree, each of these courses must be completed with a grade of 2.0 or higher.

Courses listed with an ampersand in the course number (e.g. ENGL&101) reflect the new Common Course Numbering System.

**Student Name:** \_\_\_\_\_ **Advisor Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**COMPLETION of Diversity Course (BUS 110D or CMST 204D suggested):**

<u>Course Number</u>	<u>Course Title</u>	<u>Where Completed/Course Title</u>	<u>(Year Completed)</u>	<u>(Grade)</u>
<u>Course Number</u>	<u>Course Title</u>	<u>Credits</u>	<u>Quarter Planned</u>	<u>Quarter completed</u>
<b>RELATED INSTRUCTION (15 credits)</b>				
ENGL 098 or ENGL& 101	Intro to College Writing or English Composition I	5	_____	_____
ENG T 101	Intro to Graphics and Measurements	5	_____	_____
BUS 110D, BUS 165, CMST& 210, CMST 204D, CMST& 230	Human Relation Course from this group. <b>(BUS 110D or CMST 204D recommended)</b>	5	_____	_____
		<b>15</b>		
<b>COMMON TECHNICAL REQUIREMENTS (15 credits)</b>				
*CT 101	Introduction to Composites	5	_____	_____
*WELD 101	Introduction to Welding	5	_____	_____
*ENG T 108	Introduction to 3D CAD	5	_____	_____
		<b>15</b>		

\* classes can be substituted based on the apprenticeship program.

**APPRENTICESHIP REQUIREMENTS**

Proof of apprenticeship may be provided by the presentation of the original Journeyman’s card. College Staff in the Aerospace and Advanced Manufacturing Careers division will provide the approval signature. Students should attach a copy of the journeyman’s card to the degree application.

- Completion of 5,200 hours of OJT certified by the Apprenticeship program. Approval Signature \_\_\_\_\_ Date \_\_\_\_\_
- Completion of 450 hours of related training certified by Apprenticeship program Approval Signature \_\_\_\_\_ Date \_\_\_\_\_

Students completing this ATA degree can transfer directly to the Information Technology and Administrative Management (ITAM) program at Central Washington University or to the Manufacturing Operations program at Clover Park Technical College to pursue a Bachelor of Applied Science (BAS) degree. Go to [www.cwu.edu/it-management/bas-overview](http://www.cwu.edu/it-management/bas-overview) or [www.cptc.edu/programs/basmo](http://www.cptc.edu/programs/basmo) for more information.

Everett Community College does not discriminate based on, but not limited to, race, color, national origin, citizenship, ethnicity, language, culture, age, sex, gender identity or expression, sexual orientation, pregnancy or parental status, marital status, actual or perceived disability, use of service animal, economic status, military or veteran status, spirituality or religion, or genetic information in its programs, activities, or employment. The Title IX Coordinator has been designated to handle inquiries regarding nondiscrimination policies and can be reached at 2000 Tower Street, Everett, WA 98201, TitleIXCoordinator@everettcc.edu, or 425-388-9271. This publication is effective **MARCH 2018**. The College reserves the right to change courses, programs, degrees and requirements. It is the student’s responsibility to be aware of correct information by routinely checking with Enrollment Services and/or the advisors listed in this publication. Requirements applicable to all certificates and degrees are published in the College Catalog. Nothing contained herein shall be construed to create any offer to contract or any contractual rights. For more information, call 425-388-9219, Everett Community College, 2000 Tower Street, Everett, WA 98201, [www.everettcc.edu](http://www.everettcc.edu)

You may complete elective credits to satisfy the ATA degree requirements in this program. These should be technical in nature, but need not be if your selection enhances your ultimate employability. Any college level English course, for example, would enhance your communication skills and be considered acceptable. Please browse through the college catalog and examine the wide variety of courses offered at EvCC. The following list is presented for your convenience and represents some of the more commonly selected elective courses.

### COMPOSITES TECHNOLOGY

CT 102 Composites Technology 1  
 CT 203 Composites Technology 2

### Technical Design (CAD)

ENG T 100 Introduction to Engineering Graphics and 2D AutoCAD  
 ENG T 103 Introduction to Revit  
 ENG T 196 Advanced Workbenches with CATIA v5  
 ENG T 203 Intermediate AutoCAD  
 ENG T 217 CAD Projects  
 ENG T 259 Engineering Graphics (SolidWorks II)  
 ENG T 193 Intermediate Catia

### OTHER SUGGESTIONS

BT 100 Beginning Keyboarding  
 ACCT 110 Small Business Accounting  
 BUS& 101 Introduction to Business  
 BT 162 Job Search & Professional Development  
 BT 242 Excel  
 BT 243 Advanced Excel  
 IT 117 CCNA 1: Introduction to Networking  
 ECON 101D Understanding Economics  
 ENG T 104 Mechanical Blueprint Reading  
 ENGR& 104 [OR BUS 102] Introduction to Design  
 ENVS 150 Land Use Planning & Regulation  
 GRAPH 100 Intro to Digital Studio  
 GEOG 205 Physical Geography with GIS, GPS, and Remote Sensing labs  
 GIS 200 Introduction to Computer Cartography  
 GIS 201 Introduction to Geographic Information Systems  
 GIS 205 Applications in Geographic Information Systems  
 GIS 250 Internship in Geographic Information Systems  
 GIS 299 Independent Study – Visual Basic for GIS  
 GRAPH 110 Foundations of Graphic Design  
 GRAPH 113 Graphic Design and Typography  
 PHOTO 110 Photography I: Basic Elements

### WELDING

WELD 111 Basic Layout  
 WELD 150 Blueprint Reading for Industry  
 WELD 151 Carbon Steel Metallurgy for the Trades  
 WELD 152 Welding Base Materials: Processes & Procedures  
 WELD 153 Non-Ferrous Metallurgy for the Trades  
 WELD 190 Oxyacetylene  
 WELD 191 Basic Arc  
 WELD 192 Advanced Arc  
 WELD 193 Basic Pipe  
 WELD 194 Gas Tungsten Arc Welding (TIG)  
 WELD 195 Gas Metal Arc/Flux Core Arc Welding  
 WELD 196 Flux Core Arc Welding  
 WELD 210 Heavy Plate Fabrication  
 WELD 211 or WELD 217 Sheet Metal Fabrication or Advanced Sheet Metal Fabrication  
 WELD 212 Pipefitting & Pipe Systems Fabrication  
 WELD 213 Practical Fabrication & Adv. Welding Techniques  
 WELD 214 Sub-Arc Welding  
 WELD 216 Advanced Tig Welding  
 WELD 225 Welding Skills Building  
 WELD 285 or 286 Computer Numeric Controlled (CNC Plasma Cutting or Aerospace CNC Plasma Cutting  
 WELD 295 Work Experience Internship

### MANUFACTURING TECHNOLOGY

MFG T 102 Manufacturing Employment Readiness  
 MFG T 107 Machining with Mastercam

### ENGLISH COURSES

You may select any English course, ENGL& 101 or higher, or any Communications course (CMST).

### HUMAN RELATIONS (R)

You may take any human relations course listed on Page 2

### INTERNSHIP

MFG T 171  
 MFG T 172

### MATHEMATICS COURSES

Math 085 is particularly recommended for the degree if you haven't taken a higher level course in Technical Geometry and Trigonometry.

### SCIENCE COURSES

You may select any physics, chemistry, or engineering course

### BUSINESS COURSES

You may select any business course