Aviation Maintenance Technology Programs

Advanced Avionics Programs

**GENERAL INFORMATION**

*Aviation Maintenance Technicians (AMTs)*, also known as aircraft mechanics, are responsible for keeping aircraft in airworthy condition. They perform regularly scheduled inspections and maintenance, as required by the Federal Aviation Administration (FAA). *Avionics Technicians or Aircraft Electronic Technicians (AETs)* are AMTs with advanced avionics training and certification.

Besides routine maintenance and inspections, work for Technicians involves repairs, replacement of parts, use of precision tools, troubleshooting for problems and testing of equipment following repairs to ensure that work has been done properly and within prescribed safety limits.

The commercial airlines or smaller facilities require technicians to work on many types of aircraft and perform all phases of the maintenance process. In other larger facilities, technicians may specialize in preventative maintenance and in specific parts of the maintenance process.

Technicians are FAA certified requiring hands-on training as well as classroom hours in appropriate programs. Avionics Bench Technicians (Bench Techs) only perform avionics manufacture, troubleshooting, and repair of components and do not require FAA certification.

Though there is high demand for AMTs, industry indicates the highest demand for employees is the AET.

EvCC’s Aviation Maintenance Technology program has been operating on Paine Field in Everett, Washington for 50 years and is an FAA Part 147 operating under Air Agency Certificate EU9T125R. It provides education and training necessary to qualify for the FAA AMT Certificate with Airframe and Powerplant (A & P) ratings. The curriculum meets or exceeds the minimum number of hours required by 14 CFR Part 147.

The Aviation Maintenance Technician School (AMTS) is eight quarters, including Summer Quarters, and the Advanced Avionics program is two quarters. Courses in the AMTS provide experience in reciprocating and turbine engines, airframe repair, maintenance, and inspection procedures. Courses in the Advanced Avionics program provide experience with electronics, wiring, fiber optics, aircraft avionics systems, and FCC license preparation.

**ADMISSION AND DEGREE REQUIREMENTS**

*AMTS (Part 147) Program:*

- **Admission Requirements**
  - Minimum 18 years of age
  - High School Diploma or equivalent certificate
  - Per FAA regulation, ability to read, write, and speak the English language
  - Eligibility for ENGL& 101 and MATH 086
  - Completion of Aviation Information Session within two years of program admission
  - Completion of mandatory orientation prior to beginning program

- **Degree Requirements**
  - Cumulative GPA of 2.0 in all coursework completed at EvCC
  - Must earn a 2.0 (C) in all required courses
  - Meet all FAA required hours and coursework

*Advanced Avionics Program:*

- **Admission Requirements**
  - Eligibility for ENGL& 101 and MATH&141 or hold the FAA AMT Certificate or completion of General Aviation curriculum in the AMTS program.
  - Completion of Avionics Information Session

Approved by Instructional Council October 24, 2017
EvCC Aviation Maintenance Technology offers the following certificates and degrees in the Aviation Maintenance Technology and Advanced Avionics programs:

- **AMTS (Part 147) Program**
  1. **Airframe and Powerplant License Preparation: 160 credits**
     Preparation for the FAA AMT License only. **This Preparation is not eligible for financial aid.**
  2. **Aviation Maintenance Technology Certificate: 73 – 75 credits**
     Preparation for the FAA AMT License and completion of 15 – 20 credits of general education courses.
  3. **Aviation Maintenance Technology ATA: 90 credits**
     Preparation for the FAA AMT License and completion of 25 - 30 credits of general education courses.
  4. **Aviation Maintenance Technology AAS-T: 90 credits**
     Preparation for the FAA AMT License and completion of 30 – 35 credits of general education courses. This degree is intended for students transferring to Eastern Kentucky University for an Aviation Bachelor of Science or to Clover Park Technical College for an Operations Management Bachelor of Applied Science.

- **Advanced Avionics Program**
  1. **Aircraft Electronics Short Term Certificate: 16 credits**
     Qualifies students for entry level employment in a variety of industry sectors in the electronics field. **Certificate is not eligible for financial aid.**
  2. **Aircraft Wiring Short Term Certificate: 12 credits**
     Qualifies students for entry level employment in the aerospace manufacturing sector in a wiring field. **Certificate is not eligible for financial aid.**
  3. **Aircraft Avionics Systems Short Term Certificate: 12 credits**
     Qualifies students for entry level employment in the aerospace manufacturing sector. **Certificate is not eligible for financial aid.**
  4. **Avionics Technician Short Term Certificate: 40 credits**
     Combination of the Short Term Certificates listed above, qualifying students to work as Avionics Bench Technicians. When combined with the FAA AMT Certificate, qualifies students to work in Aviation Maintenance fields as an Avionics Technician or AET. **Certificate is not eligible for financial aid.**
  5. **Aircraft Electronics Certificate: 55 credits**
     Qualifies students to work as Avionics Bench Technicians. When combined with the FAA AMT Certificate, qualifies students to work in Aviation Maintenance fields as an Avionics Technician or AET.
  6. **Aircraft Electronics Technician ATA: 125 credits**
     Combination of AMTS and Advanced Avionics programs with 25 - 30 credits of general education courses.
  7. **Airframe/Avionics ATA: 125 credits**
     Combination of Airframe portion of the AMTS and Advanced Avionics programs with 25 – 30 credits of general education courses.

Other potential programs to benefit aviation mechanics:

- **Composites**
  The Composites program is a hands-on, in-depth overview of the process involved in the development and production of composite products. Skills include tooling, fabrication, machining, assembly, quality assurance, repair, lay-up, vacuum bagging, and cure processing of wet laminating. The program is designed to prepare students to fabricate, assemble and repair composite materials on aircraft.

- **Industrial painting**
  Short term program providing hands-on skill preparation in painting technique, safety, and equipment and materials handling.

- **A & P Test Preparation**
  EvCC’s A&P Test Prep Program is designed to prepare participants to test for an FAA Mechanic’s Certificate with an Airframe, Powerplant or A&P rating. Individuals should already hold their FAA 8610-2.
CAREER OPTIONS

Employment opportunities in aviation maintenance (Aviation Maintenance Technicians and Avionics Technicians) are in high demand. 649,000 aircraft mechanics are needed worldwide, with approximately 118,000 of those in North America. Most job openings for aircraft mechanics will stem from position replacement and aerospace growth. The majority of aviation maintenance technicians work for airlines, maintenance repair and overhaul (MRO) stations or general aviation facilities. A smaller number work for the Federal Government at facilities in several metropolitan areas located throughout the country. Others work for independent repair shops or companies that operate their own airplanes for transporting executives and/or cargo. Some are self-employed. Industry gives stronger hiring preference to individuals holding both the A & P license and avionics certification.

Opportunities for advancement to positions as supervisors and inspectors are available to qualified aircraft mechanics. Industry prefers individuals hold a bachelor’s degree in addition to their FAA ratings. In 2016, median hourly earnings of aircraft mechanics and service technicians is $28.93 and $29.21 for Avionics Technicians.

Note: Background checks and drug testing are required in the aviation industry. Criminal history or illegal drug use may be cause for disqualification for employment. Positive drug testing can be cause for suspension or revocation of the FAA AMT License.

LEARNING OUTCOMES

1. Demonstrate and apply appropriate aviation technical applications, problem solving, and critical thinking skills required in industry while preparing for the FAA Aviation Maintenance Technician certification with Airframe and Powerplant ratings.
2. Demonstrate multiple communication means specific to aviation maintenance concepts and technical processes using appropriate terms and vocabulary.
3. Demonstrate safe work habits and behavior in aviation, reflecting concern, care, and pride in self, others, equipment, aircraft, and facilities.
4. Demonstrate and apply industry required technical skills and data.
5. Demonstrate and apply appropriate industry required skills in:
   1. Attendance
   2. Character
   3. Teamwork
   4. Appearance
   5. Attitude
   6. Productivity
   7. Organizational Skills
   8. Communication
   9. Cooperation
   10. Respect
   11. Documentary Discipline

PROGRAM ADVISORS

It is essential to meet with a program advisor and maintain the certificate or degree checklist while at Everett Community College. Advisors are assigned by the Aviation division office. Contact your assigned academic advisor to help you create your Degree Audit Plan. If no answer, call the division office at 425-388-9533.

Dale Lerback C80 425-388-9521 dlerback@everettcc.edu
Steve Tuggle C80 425-388-9969 stuggle@everettcc.edu
Shay Mohn C80 425-388-9264 smohn@everettcc.edu
Bert Davis C80 425-388-9966 x7382 bdavis@everettcc.edu
Raylene Alexander (Avionics) C80 425-388-9519 ralexander@everettcc.edu

APPLYING FOR GRADUATION

One quarter before expected graduation, the certificate/degree checklist should be submitted with an online diploma application to the Enrollment Services Office.

GETTING STARTED AT EVCC

If you require information for applying, registering for classes, or other needs, please contact the Aviation division front office at 425-388-9533.

For more information about our graduation rates, the median debt of students who complete the program, and other information, please visit our website www.everettcc.edu/gainfullyemployment
AVIATION MAINTENANCE TECHNOLOGY DEPARTMENT

STUDENT NAME _________________________  SID __________________  ADVISOR ____________________________

Must earn a C grade (2.0) or better in all required courses. Courses may be subject to prerequisites.

<table>
<thead>
<tr>
<th>Course</th>
<th>Course Title</th>
<th>Credits</th>
<th>Grade</th>
<th>Quarter</th>
<th>Year</th>
<th>College/University</th>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 098</td>
<td>Introduction to College Writing</td>
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<td>MATH 086</td>
<td>Essentials of Intermediate Algebra</td>
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<td>CMST 210</td>
<td>Interpersonal Communication</td>
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SHORT TERM CERTS

CHOOSE ONE CERTIFICATE FROM THE FOLLOWING

AVIATION MAINTENANCE TECHNOLOGY CERTIFICATE (73 – 75 CREDITS WILL APPLY TO CERTIFICATE)

COMPLETE THE FOLLOWING COURSEWORK

GENERAL QUARTER 1

AMT 101  Basic Electricity                        5
AMT 102  Basic Electricity 2: Practical Applications 3
AMT 111  Math and Physics                         4
AMT 141  Aircraft Drawings                        2
AMT 161  Materials & Processes                    7

GENERAL QUARTER 2

AMT 105  Human Factors                            2
AMT 180  Fundamentals of Troubleshooting           2
AMT 121  Weight & Balance                         2
AMT 131  Corrosion Control/Fluid Lines             5
AMT 151  Ground Operations & Servicing             4
AMT 171  Federal Aviation Regulations (FAR’s)      4

POWERPLANT QUARTER 1

AMT 251  Reciprocating Engines I                   5
AMT 252  Reciprocating Engines II                   5
AMT 271  Engine Ignition & Starting Systems        6
AMT 275  Lubrication Systems: Reciprocating Engines 4

POWERPLANT QUARTER 2

AMT 253  Turbine Engines I                        5
AMT 254  Turbine Engines II                        5
AMT 261  Engine Instruments                        1
AMT 265  Engine Fire Protection                     1
AMT 267  Engine Electrical                         5
AMT 276  Lubrication Systems: Turbine Engines       3

POWERPLANT QUARTER 3

AMT 257  Engine Inspection                          3
AMT 279  Engine Fuel Systems                         7
AMT 281  Engine Induction & Cooling                 4
AMT 285  Propellers & Fans                           6

AIRFRAME QUARTER 1

AMT 205  Wood, Covers and Finishes                  9
AMT 215  Assembly & Rigging (with Helicopters)      7
AMT 235  Navigation Communications Systems          1
AMT 237  Airframe Fuel Systems                       3

AIRFRAME QUARTER 2

AMT 201  Composites                                 5
AMT 211  Sheet Metal                                 10
AMT 231  Ice & Rain Control Systems                  3
AMT 239  Aircraft Electrical                         2

AIRFRAME QUARTER 3

AMT 207  Welding                                    2
AMT 221  Airframe Inspection                          4
AMT 223  Landing Gear/Hydraulics                      9
AMT 241  Aircraft Instrument Systems                  2
AMT 245  Cabin Environment                            3
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>AVIO&amp; 101</td>
<td>Aircraft Electrical Fundamentals</td>
<td>8</td>
</tr>
<tr>
<td>AVIO&amp; 102</td>
<td>Aircraft Electronic Fundamentals</td>
<td>8</td>
</tr>
<tr>
<td>AVIO&amp; 103</td>
<td>Aircraft Wiring Systems</td>
<td>2</td>
</tr>
<tr>
<td>AVIO&amp; 104</td>
<td>Aircraft Fiber Optic Systems</td>
<td>2</td>
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<tr>
<td>AVIO&amp; 201</td>
<td>Aircraft Digital Electronic Instrument Systems</td>
<td>8</td>
</tr>
<tr>
<td>AVIO&amp; 202</td>
<td>Avionics Systems for Airframe and Powerplant</td>
<td>8</td>
</tr>
<tr>
<td>AVIO&amp; 203</td>
<td>Avionics Communications</td>
<td>2</td>
</tr>
<tr>
<td>AVIO&amp; 204</td>
<td>Principles of Avionics Troubleshooting</td>
<td>2</td>
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<tr>
<td>ENGL&amp; 101</td>
<td>English Composition I</td>
<td>5</td>
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<tr>
<td>MATH&amp; 141</td>
<td>Precalculus I: College Algebra</td>
<td>5</td>
</tr>
<tr>
<td>CMST&amp;210</td>
<td>Interpersonal Communication</td>
<td>5</td>
</tr>
</tbody>
</table>

**AIRCRAFT ELECTRONICS CERTIFICATE (16 CREDITS)**

**AIRCRAFT WIRING CERTIFICATE (12 CREDITS)**

**AIRCRAFT AVIONICS SYSTEMS CERTIFICATE (12 CREDITS)**

**AVIONICS TECHNICIAN CERTIFICATE (40 CREDITS)**

- Completion of Aircraft Electronics Certificate: 16
- Completion of Aircraft Wiring Certificate: 12
- Completion of Aircraft Avionics Systems Certificate: 12

**LONG TERM CERT**

**AIRCRAFT Electronics Technician CERTIFICATE (55 CREDITS)**

- Completion of Avionics Technician Certificate: 40
- Completion of Aircraft Wiring Certificate: 12
- Completion of Aircraft Avionics Systems Certificate: 12

**ASSOCIATE IN TECHNICAL ARTS IN AVIATION MAINTENANCE TECHNOLOGY (90 CREDITS)**

- A&P License OR Students with an AMT Certificate with A&P Ratings (or Aviation Program Certificate) may be awarded sixty (60) credits after completing 30 required credits at EvCC: 60
- Completion of Diversity Course: 3-5
- Required CORE requirements (Listed above)

**AIRFRAME/AVIONICS ATA DEGREE (125 CREDITS)**

- A&P License OR Students with an AMT Certificate with A&P Ratings (or Aviation Program Certificate) may be awarded sixty (60) credits after completing 30 required credits at EvCC: 60
- Completion of Aircraft Electronics Technician Certificate: 55
- Completion of Diversity Course: 3-5
- Social Science course (see note 2) (SS): 5
- Natural Science course (see note 2) (NS): 5

**AIRFRAME/AVIONICS ATA DEGREE (125 CREDITS)**

- A&P License OR Students with an AMT Certificate with A&P Ratings (or Aviation Program Certificate) may be awarded sixty (60) credits after completing 30 required credits at EvCC: 60
- Completion of Aircraft Electronics Technician Certificate: 55
- Completion of Diversity Course: 3-5
- Social Science course (see note 2) (SS): 5
- Natural Science course (see note 2) (NS): 5
# AAS-T

## ASSOCIATE IN APPLIED SCIENCES – TRANSFER AVIATION MAINTENANCE TECHNOLOGY (90 CREDITS Minimum. Minimum 2.5 GPA)

<table>
<thead>
<tr>
<th>Completion of Diversity Course</th>
<th>3-5</th>
</tr>
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<tbody>
<tr>
<td>A&amp;P LICENSE: Student with an A&amp;P License from a FAR Part 147 school may be awarded 45 credits by EvCC after completing 30 required credits at EvCC. Utilizing the A&amp;P License option for this transfer degree requires completion of 15 additional elective credits (which can be A&amp;P courses in General, Airframe, and Powerplant)</td>
<td>45</td>
</tr>
</tbody>
</table>

**A&P CERTIFICATE:** Students completing EvCC’s A&P program may be awarded up to 160 elective credits towards this transfer degree.

**ENGL& 101 or ENGL& 101D (See Note A)**

**MATH& 141**

**Humanities (CMST course) (See Note B and Note 2)**

**Social Sciences (See Note C)**

**Natural Sciences (See Note D and Note 2)**

**Electives (See Notes D and E)**

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### NOTES FOR CERTIFICATE AND DEGREES

**Note 1:** Select a computer course from: CL 101, CS 110, BT 100, 130, 219 or 229

**Note 2:** Humanities, Social Science and Natural Science courses must be selected from the approved list for the Associate in Arts and Sciences DTA – degree.

**Note 3:** (CP) computer proficiency; (CS) computation skills; (HR/IC) human relations and interpersonal communications; (WS) writing skills, (H) humanities, (SS) social sciences, (NS) natural sciences.

**Note 4:** These checklists are designed for students with an interest in earning a certificate or degree in Aviation Maintenance Technology. A checklist should be maintained by the student while at Everett Community College. The quarter before expected completion, the checklist should be submitted by the student, with a diploma application, to the Enrollment Services Office. All certificate requirements are listed in the Catalog, including the completion of the minimum credits, with a minimum 2.0 GPA.

**Note 5:** Courses included FAA approved Part 147 curriculum.

Courses listed with an ampersand in the course number (e.g. ENGL& 101) reflect the Common Course Numbering System. For more information, go to [www.everettcc.edu/ccn](http://www.everettcc.edu/ccn)

### Note: Transfer courses to Embry-Riddle Aeronautical University (ERAU) also exist. ERAU does not provide a degree transfer articulation agreement, however a list of equivalency classes for transfer are available at the Aviation program main office or through ERAU. Please consult with an ERAU advisor for specific information regarding their program and transfer courses.

**Note:** EKU BS Aviation – Aerospace Technology (AT) concentration will accept a maximum of 26 semester hours (39 quarter hours) of aviation technical electives in Powerplant courses. Powerplant courses must include Turbine Engine Theory. Transfer students are not to take BTO 100. Aviation courses that are equivalent to EKU’s AVN Tech Electives but are in excess of the 26 semester hours (39 quarter hours) total, may be accepted and posted to satisfy the EKU BS minimum degree requirements of 120 semester hours.

**Note A:** Students transferring to Eastern Kentucky University must also complete ENGL& 102.

**Note B:** Students transferring to Clover Park Technical College are recommended CMST& 220 as the Humanities Course. Students transferring to Eastern Kentucky University are required to take CMST& 210 as their Humanities Course.

**Note C:** Students transferring to Eastern Kentucky University must complete ECON& 201.

**Note D:** Students transferring to Clover Park Technical College are recommended PHYS& 114 as the Natural Science-Lab Course and are also required to take MATH& 146 for a total of 10 Natural Science credits.

**Note E:** Students transferring to Eastern Kentucky University must complete CL 101 and the General Aviation and Powerplant courses (5 quarters) through the EvCC AMT program. Students must complete Turbine Engine Theory (Powerplant course) successfully for transfer.

**Note F:** Beyond the Associate’s Degree, Eastern Kentucky University provides the opportunity to complete a section of courses at EvCC or EKU, meeting EKU’s Bachelor of Science in Aviation requirements. These are called “Bridge Courses.” Bridge Courses are not required for the AAS-T degree or for admission to EKU. These courses are above and beyond the AAS-T degree requirements and are financial aid eligible within the federal guidelines. Please check with the EvCC’s Financial Aid Office to ensure guidelines are met or if choosing to take the Bridge Courses through EKU, through their Financial Aid Office.

Any ATA Degree can be applied toward a Bachelor of Applied Science in Information Technology and Administrative Management (ITAM) through Central Washington University on the EvCC campus. For more information, go to [www.everett.wsu.edu](http://www.everett.wsu.edu).
### Three Year Sample Student Schedule

<table>
<thead>
<tr>
<th>2 Quarters</th>
<th>8 Quarters</th>
<th>2 Quarters</th>
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<tbody>
<tr>
<td>ADVANCED AVIONICS OR GENERAL ED.</td>
<td>GENERAL AVIATION CURRICULUM (2 QUARTERS) (pre-req. to Powerplant and Airframe)</td>
<td>Powerplant OR Airframe</td>
</tr>
<tr>
<td></td>
<td>Powerplant OR Airframe</td>
<td>Airframe OR Powerplant</td>
</tr>
<tr>
<td></td>
<td>GENERAL ED. OR ADVANCED AVIONICS</td>
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</tbody>
</table>

Everett Community College does not discriminate on the basis of race, religion, creed, color, national origin, age, sex, sexual orientation, marital status, the presence of any physical, sensory or mental disability, genetic information or status as a disabled or Vietnam era veteran in its program and activities, or employment. The Vice President of Instruction and Student Services has been designated to handle inquiries regarding student-related non-discrimination policies and can be reached at 2000 Tower Street, Everett, WA 98201, or by phone at (425)388-9216. The Vice President of Administrative Services/Human Resources has been designated to handle employment-related inquiries regarding the non-discrimination policies and can be reached at 2000 Tower Street, Everett, WA 98201, or by phone at (425)388-9232. This publication is effective November 2017. 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](http://www.everettcc).