Aviation Maintenance Technician
Supplemental Program Resources

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Supplemental Program Resources 2024

Introduction

This document provides supplemental information for the Aviation Maintenance Technician program of study. It may be updated or revised as the base program of study, or complementary programs, are updated, added, or removed. Please contact the appropriate Education Programs Professional with any questions.

The Program of Study includes the approved courses, complementary courses, alignment(s) to industry, postsecondary options, and additional information.

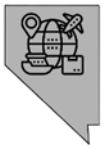
The Equipment List for the Aviation Maintenance Technician program of study is included and, if applicable, additional items used only in the complementary course(s) are noted.

The Crosswalks and Alignments connect and support the Aviation Maintenance Technician standards for the Transportation, Distribution and Logistics program of study. Complementary course standards are not listed in the crosswalks and alignments.

Program of Study Information

The following program of study information sheet as well as the program structure tables for the courses are provided to be able to print separately for handouts. The information provided is based on the best available information at the time of this document and will be updated as appropriate.

Aviation Maintenance Technician



The Aviation Maintenance Technician program will introduce students to the operational and scientific nature of the aviation maintenance industry. This program will introduce students to safe working habits, components of a reciprocating engine, aircraft control systems, and avionics systems.

Transportation, Distribution and Logistics Career Cluster

Transportation, Distribution, and Logistics is focused on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

Postsecondary Options

Associate Degrees

- Aviation Technology: Flight Operations, AAS (CSN)
- Transportation Technologies AAS (TMCC)

Bachelors Degree

- Aerospace Engineering BS (UNR)
- Electrical Engineering BS (UNLV)

Masters Degree

- Master of Science Aerospace Engineering MS (UNLV)

NEVADA Department of Education

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For additional information on this cluster, please contact:

cteinfo@doe.nv.gov

Website: https://doe.nv.gov/offices/craleo/cte

Required Courses

Aviation Maintenance Technician I
Aviation Maintenance Technician II

Complementary Courses

Aviation Maintenance Technician Advanced Studies
CTE Work Experience – Transportation, Distribution, and Logistics
Industry-Recognized Credential – Aviation Maintenance Technician

Work-Based Learning Opportunities

Job Shadowing / Internship / CTE Work Experience/ School-based Enterprise/ Apprenticeship Ready Programs

Career and Technical Student Organization

SkillsUSA SkillsUSA NEVADA TSA NEVADA TSA TECHNOLOGY STUDENT ASSOCIATION

State Recognized Industry Certifications

Refer to the Governor's Office of Workforce Innovation's Nevada Industry Recognized Credential List

Aligned to Industry

Occupation	Median Wage Per year	Annual Openings	% Growth
Aircraft and Avionics Equipment Mechanics and Technicians	$65,550	13,100	6%
Electrical and Electronics Installers and Repairers	$61,760	9,900	-1%
Assemblers and Fabricators	$37,170	191,100	-6%
Transportation Inspectors	$79,770	NA	2%
Airfield Operations Specialists	$47,880	1,000	8%
Aerospace Engineering and Operations Technologists and Technicians	$73,580	1,200	6%

Source U.S. Bureau of Labor Statistics 2022

Program Structure for Aviation Maintenance Technician

The core course sequencing is provided in the following table. Complementary Courses are available and provided later in this document. The following courses provide a completed program of study.

Core Course Sequence (R) with Lab Course(s) (C)

Required/ Complementary	Course Title	Abbreviated Name	CIP Code	SCED Subject Area	SCED Course Identifier	SCED Course Level	SCED Unit Credit	SCED Course Sequence	SCED Course Number
R	Aviation Maintenance Technician I	AVI MAINT TECH I	47.0608	20	113	G	1.00	12	20113G1.0012
R	Aviation Maintenance Technician II	AVI MAINT TECH II	47.0608	20	113	G	1.00	22	20113G1.0022

The complementary courses are provided in the following table. **The qualifying program of study must be completed prior to enrolling in the complementary course(s)**. A program does not have to utilize the complementary courses for students to complete their program of study.

Required/ Complementary	Course Title	Abbreviated Name	CIP Code	SCED Subject Area	SCED Course Identifier	SCED Course Level	SCED Unit Credit	SCED Course Sequence	SCED Course Number
C	Aviation Maintenance Technician Advanced Studies	AVI MAINT TECH AS	47.0608	20	113	E	1.00	11	20113E1.0011
C	Industry Recognized Credential – Aviation Maintenance Technician	IRC AVI MAINT TECH	47.0608	20	999	E	1.00	11	20999E1.0011
C	CTE Work Experience – Transportation, Distribution, and Logistics	WORK EXPER TRANS	99.0016	20	998	G	1.00	11	20998G1.0011

CIP Code – Classification of Instructional Programs (CIP) Codes

SCED – School Courses for the Exchange of Data that populates the State Infinite Campus System and the System for Accountability Information in Nevada (SAIN)

Course Descriptions

Aviation Maintenance Technician I

Prerequisite: None

This course will introduce students to the operational nature of the aviation maintenance industry. This course will introduce students to the practical application of safe work habits and the correct use of tools and precision test instruments. Students will practice safe working habits and learn the components of a reciprocating engine, aircraft control systems, and avionics systems. The course will include aircraft service requirements, ground operation procedures, and calculating the cost associated with aircraft preventative maintenance. The appropriate use of technology and industry-standard equipment is an integral part of this course.

Aviation Maintenance Technician II

Prerequisite: Aviation Maintenance Technician I

This course is a continuation of Aviation Maintenance Technician I. This course provides intermediate aviation maintenance technician students with instruction in general aeronautics. It includes the study of physical mathematics, common and special tools and measuring devices, fluid lines, hardware, aircraft servicing, and documentation (Part 65). The appropriate use of technology and industry-standard equipment is an integral part of this course.

Aviation Maintenance Technician Advanced Studies

Prerequisite: Completion of Aviation Maintenance Technician Program of Study

This course is offered to students who have completed all content standards in the Aviation Maintenance Technician program of study and desire to pursue advanced study through investigation and in-depth research. Students are expected to work independently or in a team and consult with their supervising teacher for guidance. The supervising teacher will give directions, monitor, and evaluate the students' topic of study. Coursework may include various work-based learning experiences such as internships and job shadowing, involvement in a school-based enterprise, completion of a capstone project, and/or portfolio development. This course may be repeated for additional instruction and credit.

Industry-Recognized Credential – Aviation Maintenance Technician

Prerequisite: Completion of Aviation Maintenance Technician Program of Study

This course is offered to students who have completed all content standards in the Aviation Maintenance Technician program of study and desire to pursue an Industry-Recognized Credential that aligns with the standards and skills associated with the Aviation Maintenance Technician Program of Study. This course is designed to expand the students' opportunities to pursue certification aligned with employment standards in the industry aligned with this program of study. The supervising teacher will provide instruction aligned with the certification requirements, monitor progress toward certification, and provide the students with appropriate testing or certification opportunities associated with the intended Industry-Recognized Credential that is the subject of the course. This course may be repeated for additional instruction and credit.

CTE Work Experience – Transportation, Distribution, and Logistics

Prerequisite: Completion of Level 2 course in the qualifying program of study

This course is designed to expand the students' opportunities for applied learning. This course provides an in-depth CTE work experience that applies the processes, concepts, and principles as described in the classroom instruction. This course will encourage students to explore and develop advanced skills through work-based learning directly related to the program of study. The course must follow NAC 389.562, 389.564, 389.566 regulations.

Equipment List

This recommended list is based upon a classroom size of 25 students. All costs are estimated and may be adjusted once verified and justified by districts with current quotes. No specific equipment vendor or brand names are endorsed due to various possibilities, but school districts should consult with stakeholders to ensure industry-recognized equipment and software are purchased. The intent of this list is to provide school districts with guidance on the equipment needed to implement the state standards for an Aviation Maintenance Technician program.

CTE Classroom Equipment **Total: $1,560**

QTY	ITEM DESCRIPTION	UNIT	TOTAL
2	Storage Cabinets (36” x 12” x 72”) (lockable)	$400	$800
1	Eyewash Station	$300	$300
2	Fire Extinguisher	$130	$260
1	Sink with Soap Dispenser	$100	$100
1	First Aid Kit	$100	$100

Program Equipment **Total: $125,800**

QTY	ITEM DESCRIPTION	UNIT	TOTAL
25	Student Computers (enhanced memory/speed, download capable)	$1,500	$37,500
1	Teacher Computer (memory enhanced, download compatible)	$1,500	$1,500
1	Technology Storage/Charging System (optional)	$2,000	$2,000
1	12V Aviation Electrical System Trainer	$22,800	$22,800
1	Cockpit Instrumentation Trainer	$15,700	$15,700
1	Landing Gear System Trainer	$13,400	$13,400
2	Engine Trainers	$8,300	$16,600
1	Aviation Hydraulic System Trainer	$7,000	$7,000
1	Fluid Lines & Fittings Trainer	$4,800	$4,800
1	Aviation Pneumatic System Trainer	$4,500	$4,500

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Instructional Materials Total: $4,000

QTY	ITEM DESCRIPTION	UNIT	TOTAL
25	Student Textbooks Approved CTE Instructional Materials list can be found here.	$100	$2,500
1	Teacher Textbook Edition and Resources	$500	$500
Varies	Federal Aviation Administration (FAA) Handbooks and Resources	$1,000	$1,000

Instructional Supplies Total: $14,900

QTY	ITEM DESCRIPTION	UNIT	TOTAL
12	Safety Wire Starters Kits	$250	$3,000
12	Combination Sets (includes 12" machinists square, protractor head and centering head)	$200	$2,400
Varies	Measuring Tools (thickness gauge sets, calipers, machinists' scales, steel tape rulers, etc.)	$2,500	$2,500
Varies	Welding Personal Safety Equipment (welding hoods, gloves, ear protection, aprons, safety glasses/goggles, mask, etc.)	$2,500	$2,500
Varies	Hand Tools (assortment of pliers, screw drivers, combination wrenches, etc.)	$2,500	$2,500
Varies	Metal Working Tools	$1,500	$1,500
Varies	Inspection tools (inspection mirrors, flashlights, and 10x magnifying glasses)	$500	$500

Other Total: $1,275

QTY	ITEM DESCRIPTION	UNIT	TOTAL
1	Occupational Safety and Health Administration (OSHA) Instructor Training	$300	$300
25	Occupational Safety and Health Administration (OSHA) Student Exams	$39	$975

Category Totals:

Classroom Equipment	$1,560
Program Equipment	$145,800
Instructional Materials	$4,000
Instructional Supplies	$14,900
Other	$1,275
Estimated Program Total	**$167,535**

Crosswalks and Alignments for Program of Study Standards

Crosswalks and alignments are intended to assist the teacher make connections for students between the technical skills within the program and academic standards. The crosswalks and alignments are not intended to teach the academic standards but to assist students in making meaningful connections between their CTE program of study and academic courses. The crosswalks are for the required program of study courses, not the complementary courses.

Crosswalks (Academic Standards)

The crosswalks of the Aviation Maintenance Technician Standards show connections with the Nevada Academic Content Standards. The crosswalk identifies the performance indicators in which the learning objectives in the Aviation Maintenance Technician program connect with and support academic learning. The performance indicators are grouped according to their content standard and are crosswalked to the Nevada Academic Content Standards in English Language Arts, Mathematics, and Science.

Alignments (Mathematical Practices)

In addition to connections with the Nevada Academic Content Standards for Mathematics, many performance indicators support the Mathematical Practices. The following table illustrates the alignment of the Aviation Maintenance Technician Standards Performance Indicators and the Mathematical Practices. This alignment identifies the performance indicators in which the learning objectives in the Aviation Maintenance Technician program connect with and support academic learning.

Alignments (Science and Engineering Practices)

In addition to connections with the Nevada Academic Content Standards for Science, many performance indicators support the Science and Engineering Practices. The following table illustrates the alignment of the Aviation Maintenance Technician Standards Performance Indicators and the Science and Engineering Practices. This alignment identifies the performance indicators in which the learning objectives in the Aviation Maintenance Technician program connect with and support academic learning.

Crosswalks (Common Career Technical Core)

The crosswalks of the Aviation Maintenance Technician Standards show connections with the Common Career Technical Core. The crosswalk identifies the performance indicators in which the learning objectives in the Aviation Maintenance Technician program connect with and support the Common Career Technical Core. The Common Career Technical Core defines what students should know and be able to do after completing instruction in a program of study. The Aviation Maintenance Technician Standards are crosswalked to the Transportation, Distribution, and Logistics Career Cluster™ and the Facility and Mobile Equipment Maintenance Career Pathway.

Crosswalk of Aviation Maintenance Technician Program of Study Standards and the Nevada Academic Content Standards

English Language Arts: Language Standards

Nevada Academic Content Standards		Performance Indicators
L.11-12.6	Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.	1.5.2

English Language Arts: Reading Standards for Literacy in Science and Technical Subjects

Nevada Academic Content Standards		Performance Indicators
RST.11-12.2	Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.	2.1.16, 5.1.2, 5.1.6, 5.1.7 5.3.1
RST.11-12.3	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.	2.1.19, 2.1.20
RST.11-12.4	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics.	2.1.16, 5.1.2, 5.1.6, 5.1.7 5.3.1
RST.11-12.5	Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.	2.1.16, 5.1.2, 5.1.6, 5.1.7 5.3.1
RST.11-12.7	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.	3.1.2, 3.1.4, 3.2.1, 3.3.2 4.1.5, 4.1.6, 5.2.10, 5.3.2
RST.11-12.8	Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.	3.2.2, 3.2.3, 3.3.3, 5.2.7 5.3.5
RST.11-12.9	Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.	2.1.1, 2.1.2, 2.1.9, 2.1.20 3.1.4, 3.2.1, 3.2.2, 3.2.3 3.3.3, 4.1.2, 4.1.3, 4.1.4 4.1.5, 4.1.6, 5.1.4, 5.1.10 5.2.5, 5.2.7, 5.2.10, 5.2.14 5.3.2, 5.3.4, 5.3.5, 5.3.8 3.3.2

English Language Arts: Speaking and Listening Standards

Nevada Academic Content Standards		Performance Indicators
SL.11-12.1a	Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas.	1.1.1, 1.1.2, 1.2.1, 1.2.4 1.4.2, 1.5.2, 3.3.1, 4.1.2 4.1.3, 5.1.4, 5.1.10, 5.2.5 5.2.9, 5.2.13, 5.3.3, 5.3.4
SL.11-12.1d	Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the task.	3.3.1, 5.2.9, 5.2.13
SL.11-12.2	Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.	1.1.1, 1.1.2, 1.2.1, 1.2.4 1.4.2, 4.1.5, 5.2.10, 5.3.3 5.3.5
SL.11-12.3	Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, assessing the stance, premises, links among ideas, word choice, points of emphasis, and tone used.	2.1.19
SL.11-12.4	Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.	1.1.1, 1.1.2, 1.2.1, 1.2.4 1.4.2, 1.5.2, 3.2.2, 3.2.3 3.3.1, 3.3.3, 4.1.4, 5.2.7 5.2.9, 5.2.13, 5.3.3, 5.3.4

English Language Arts: Writing Standards for Literacy in Science and Technical Subjects

Nevada Academic Content Standards		Performance Indicators
WHST.11-12.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	1.2.5, 1.4.1, 2.1.2, 2.1.9 2.1.17
WHST.11-12.5	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	1.4.4
WHST.11-12.6	Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	1.4.5

Nevada Academic Content Standards		Performance Indicators
WHST.11-12.7	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	3.1.2, 3.1.4, 4.1.2, 4.1.3, 4.1.5 5.1.4, 5.1.10, 5.2.5, 5.2.10 5.3.2
WHST.11-12.8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.	1.1.2, 1.1.3, 1.4.2, 1.4.3, 1.5.2 3.2.1, 3.2.2, 3.2.3, 3.3.2, 3.3.3 4.1.4, 4.1.6, 5.2.7, 5.2.14 5.3.4, 5.3.5, 5.3.8
WHST.11-12.9	Draw evidence from informational texts to support analysis, reflection, and research.	2.1.16, 5.1.2, 5.1.6, 5.1.7 5.3.1

Alignment of Aviation Maintenance Technician Standards and the Mathematical Practices

Mathematical Practices	Aviation Maintenance Technician Performance Indicators
1. Make sense of problems and persevere in solving them.	4.1.1, 4.1.3
2. Reason abstractly and quantitatively.	4.1.3
3. Construct viable arguments and critique the reasoning of others.	
4. Model with mathematics.	
5. Use appropriate tools strategically.	4.1.1, 4.1.3, 4.1.4
6. Attend to precision.	4.1.1, 4.1.3, 4.1.4
7. Look for and make use of structure.	4.1.2
8. Look for and express regularity in repeated reasoning.	

Alignment of Aviation Maintenance Technician Standards and the Science and Engineering Practices

Science and Engineering Practices	Aviation Maintenance Technician Performance Indicators
1. Asking questions (for science) and defining problems (for engineering).	
2. Developing and using models.	2.4.1 – 2.4.3
3. Planning and carrying out investigations.	
4. Analyzing and interpreting data.	4.1.2, 4.1.12
5. Using mathematics and computational thinking.	4.1.1, 4.1.3, 4.1.4
6. Constructing explanations (for science) and designing solutions (for engineering).	2.4.1 – 2.4.3
7. Engaging in argument from evidence.	2.4.3
8. Obtaining, evaluating, and communicating information.	2.4.3

Crosswalks of Aviation Maintenance Technician Standards and the Common Career Technical Core

Transportation, Distribution, and Logistics Career Cluster	Performance Indicators
1. Describe the nature and scope of the Transportation, Distribution & Logistics Career ClusterTM and the role of transportation, distribution and logistics in society and the economy.	2.1.1-2.1.4, 2.3.1-2.3.4
2. Describe the application and use of new and emerging advanced techniques to provide solutions for transportation, distribution and logistics problems.	2.1.3, 2.1.4
3. Describe the key operational activities required of successful transportation, distribution and logistics facilities.	3.1.3, 3.1.6
4. Identify governmental policies and procedures for transportation, distribution and logistics facilities.	3.1.5-3.1.9
5. Describe transportation, distribution and logistics employee rights and responsibilities and employers' obligations concerning occupational safety and health.	3.1.1-3.1.5
6. Describe career opportunities and means to achieve those opportunities in each of the Transportation, Distribution & Logistics Career Pathways.	2.2.1-2.2.4

Facility & Mobile Equipment Maintenance Career Pathway	Performance Indicators
1. Develop preventative maintenance plans and systems to keep facility and mobile equipment inventory in operation.	4.1.8, 4.1.11
2. Design ways to improve facility and equipment system performance.	