



## AER Aerospace Manufacturing Technology

### Student Learning Outcomes

Communication- The student will demonstrate the ability to communicate effectively using written and/or oral communication.

Information Literacy- The student will recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information.

Problem Solving- The student will demonstrate the ability to analyze information and solve problems.

Workplace Skills - Demonstrates a mastery of workplace skills/soft skills, exhibits initiative, adapts to varied situations

### Program Outcomes

- 1 Measure aircraft components using appropriate precision instrumentation
- 2 Install aircraft fasteners in a variety of aviation materials including sheet metal
- 3 Demonstrate the appropriate safety procedures and process used in building aircraft components
- 4 Utilize engineering drawings to assemble aircraft component
- 5 Assemble sheetmetal aircraft components
- 6 Identify the basic procedures and processes associated with aviation manufacturing
- 7 Demonstrate an understanding of the role of quality assurance systems in aviation manufacturing
- 8 Students will demonstrate inspection techniques utilized in aircraft systems and assemblies
- 9 Demonstrate electrical bonding techniques utilized in aircraft systems and assemblies
- 10 Apply knowledge of fractions, decimals, and percentages to solve real-world problems
- 11 Execute proactive employability strategies to develop and manage a professional career

**AAS Aerospace Manufacturing Technology AAS-AVIA\_MFG AVMF by Semester**

**Total Credits**

**60**

**Fall**

Course #	Course Title	Credits	Function
AVC 104	Quality Control Concepts	1	Technical Studies
AVC 110	Safety/OSHA 10	1	Technical Studies
AVC 112	Blueprint Reading	2	Technical Studies
AVC 117	Hand & Power Tools	4	Technical Studies
AVC 120	Introduction to Sealing	1	Technical Studies
AVC 137	Precision Measuring	2	Technical Studies
AER 150	Assembly Overview I	3	Technical Studies
AER 157	Advanced Assembly	3	Technical Studies
MTH	Math Elective	3	General Studies

**Spring**

Course #	Course Title	Credits	Function
	Technical Electives	10	Elective
	Humanities Elective	3	General Studies
	Social Science Elective	3	General Studies

**Summer**

Course #	Course Title	Credits	Function
	Communication Elective	3	General Studies
	Technical Electives	6	Elective

**Fall**

Course #	Course Title	Credits	Function
ENG 101	Composition I	3	General Studies
	Technical Electives	12	Elective

**Technical Electives**

Course #	Course Title	Credits	Function
ACP 100	Introduction to Coatings & Paint Technology		Elective
ACP 101	Surface Preparation & Coatings		Elective
ACP 104	Specialized Coating Processes		Elective

AER 106	<b>Aerospace Manufacturing Tooling Orientation</b>		Elective
AER 111	<b>Tap and Die</b>		Elective
AER 115	<b>Aerostructures Assembly</b>		Elective
AER 116	<b>Hand Power Tools for Aerospace Tooling</b>		Elective
AER 126	<b>Tooling Capstone</b>		Elective
AER 135	<b>Quality Assurance Orientation</b>		Elective
AER 150	<b>Assembly Overview I</b>		Elective
AER 157	<b>Advanced Assembly</b>		Elective
AER 165	<b>Electrical Assembly Mechanic Orientation</b>		Elective
AER 166	<b>Electrical Hand Tools</b>		Elective
AER 167	<b>Drilling &amp; Riveting/Ground Stud Installation</b>		Elective
AER 168	<b>Wire Installation Drawings</b>		Elective
AER 169	<b>Crimping &amp; Cables</b>		Elective
AER 170	<b>Fiber Optics for Aerospace</b>		Elective
AER 175	<b>Wire Bundle Basics</b>		Elective
AER 180	<b>Soldering</b>		Elective
AER 185	<b>Wire Bundle Installation</b>		Elective
AVC 102	<b>Precision Instruments</b>		Elective
AVC 103	<b>Geometric Dimensioning &amp; Tolerancing</b>		Elective
AVC 104	<b>Quality Control Concepts</b>		Elective
AVC 107	<b>Fundamentals for Aerospace Manufacturing</b>		Elective
AVC 108	<b>Aircraft Systems &amp; Components</b>		Elective
AVC 110	<b>Safety/OSHA 10</b>		Elective
AVC 112	<b>Blueprint Reading</b>		Elective
AVC 117	<b>Hand &amp; Power Tools</b>		Elective
AVC 125	<b>Bonding and Grounding</b>		Elective
AVC 127	<b>Aviation Assembly Core</b>		Elective
AVC 135	<b>Hand Tools</b>		Elective
AVC 140	<b>Electrical Bonding &amp; Grounding</b>		Elective
AVC 145	<b>Power Island</b>		Elective
AVC 150	<b>Human Factors</b>		Elective
AVC 165	<b>Technical Writing</b>		Elective
AVC 170	<b>Conflict Resolution</b>		Elective

AVC 137	<b>Precision Measuring</b>		Elective
AVC 190	<b>Aerospace Applied Learning</b>		Elective
BUS 121	<b>Business Communications</b>		Elective
CFT 101	<b>Introduction to Composites</b>		Elective
CFT 106	<b>Composite Finish Trim</b>		Elective
CFT 112	<b>Composite Assembly I</b>		Elective
CFT 113	<b>Composite Assembly II</b>		Elective
CFT 107	<b>Composite Assembly</b>		Elective
CFT 130	<b>Composite Fabrication Methods /Applications</b>		Elective
CFT 135	<b>Overview of Composite Inspection</b>		Elective
CFT 140	<b>Composite Inspection</b>		Elective
CWG 110	<b>Welding Applications</b>		Elective
CWG 105	<b>Welding Safety &amp; Orientation</b>		Elective
LEN 100	<b>Lean for Operations</b>		Elective
MCD 106	<b>Precision Measuring</b>		Elective
MCD 137	<b>Introduction to 3D Printing</b>		Elective
NDT 114	<b>Visual Inspection</b>		Elective
ROB 100	<b>Introduction to Robotics</b>		Elective

**AAS Aerospace Manufacturing Technology AAS-AVIA\_MFG AVMF By Semester KBOR**

**Total Credits**

**60**

**Fall**

Course #	Course Title	Credits	Function
	Technical Elective	17	Technical Studies
MTH	Math Elective	3	General Studies

**Spring**

Course #	Course Title	Credits	Function
	Technical Elective	10	Elective
	Humanities Elective	3	General Studies
	Social Science Elective	3	General Studies

**Summer**

Course #	Course Title	Credits	Function
	Technical Elective	6	Elective
	Communication Elective	3	General Studies

**Fall**

Course #	Course Title	Credits	Function
	Technical Elective	12	Elective
ENG 101	Composition I	3	General Studies

**Technical Electives**

Course #	Course Title	Credits	Function
ACP 100	Introduction to Coatings & Paint Technology		Elective
ACP 101	Surface Preparation & Coatings		Elective
ACP 104	Specialized Coating Processes		Elective
AER 106	Aerospace Manufacturing Tooling Orientation		Elective
AER 111	Tap and Die		Elective
AER 115	Aerostructures Assembly		Elective
AER 116	Hand Power Tools for Aerospace Tooling		Elective
AER 126	Tooling Capstone		Elective
AER 135	Quality Assurance Orientation		Elective

AER 150	<b>Assembly Overview I</b>		Elective
AER 157	<b>Advanced Assembly</b>		Elective
AER 165	<b>Electrical Assembly Mechanic Orientation</b>		Elective
AER 166	<b>Electrical Hand Tools</b>		Elective
AER 167	<b>Drilling &amp; Riveting/Ground Stud Installation</b>		Elective
AER 168	<b>Wire Installation Drawings</b>		Elective
AER 169	<b>Crimping &amp; Cables</b>		Elective
AER 170	<b>Fiber Optics for Aerospace</b>		Elective
AER 175	<b>Wire Bundle Basics</b>		Elective
AER 180	<b>Soldering</b>		Elective
AER 185	<b>Wire Bundle Installation</b>		Elective
AVC 102	<b>Precision Instruments</b>		Elective
AVC 103	<b>Geometric Dimensioning &amp; Tolerancing</b>		Elective
AVC 104	<b>Quality Control Concepts</b>		Elective
AVC 107	<b>Fundamentals for Aerospace Manufacturing</b>		Elective
AVC 108	<b>Aircraft Systems &amp; Components</b>		Elective
AVC 110	<b>Safety/OSHA 10</b>		Elective
AVC 112	<b>Blueprint Reading</b>		Elective
AVC 117	<b>Hand &amp; Power Tools</b>		Elective
AVC 125	<b>Bonding and Grounding</b>		Elective
AVC 127	<b>Aviation Assembly Core</b>		Elective
AVC 135	<b>Hand Tools</b>		Elective
AVC 140	<b>Electrical Bonding &amp; Grounding</b>		Elective
AVC 145	<b>Power Island</b>		Elective
AVC 150	<b>Human Factors</b>		Elective
AVC 165	<b>Technical Writing</b>		Elective
AVC 170	<b>Conflict Resolution</b>		Elective
AVC 137	<b>Precision Measuring</b>		Elective
AVC 190	<b>Aerospace Applied Learning</b>		Elective
BUS 121	<b>Business Communications</b>		Elective
CFT 101	<b>Introduction to Composites</b>		Elective
CFT 106	<b>Composite Finish Trim</b>		Elective
CFT 112	<b>Composite Assembly I</b>		Elective
CFT 113	<b>Composite Assembly II</b>		Elective

CFT 107	<b>Composite Assembly</b>		Elective
CFT 130	<b>Composite Fabrication Methods /Applications</b>		Elective
CFT 135	<b>Overview of Composite Inspection</b>		Elective
CFT 140	<b>Composite Inspection</b>		Elective
CWG 110	<b>Welding Applications</b>		Elective
CWG 105	<b>Welding Safety &amp; Orientation</b>		Elective
LEN 100	<b>Lean for Operations</b>		Elective
MCD 106	<b>Precision Measuring</b>		Elective
MCD 137	<b>Introduction to 3D Printing</b>		Elective
NDT 114	<b>Visual Inspection</b>		Elective
ROB 100	<b>Introduction to Robotics</b>		Elective

**TC CERT A Aviation Sheetmetal Assembly - CBE TC-SHMTL\_ASM ASCB**

**Total Credits**

**20**

**Fall**

<b>Course #</b>	<b>Course Title</b>	<b>Credits</b>	<b>Function</b>
AER 150	<b>Assembly Overview I</b>	3	Technical Studies
AER 157	<b>Advanced Assembly</b>	3	Technical Studies
AVC 104	<b>Quality Control Concepts</b>	1	Technical Studies
AVC 110	<b>Safety/OSHA 10</b>	1	Technical Studies
AVC 112	<b>Blueprint Reading</b>	2	Technical Studies
AVC 117	<b>Hand &amp; Power Tools</b>	4	Technical Studies
AVC 137	<b>Precision Measuring</b>	2	Technical Studies
AVC 140	<b>Electrical Bonding &amp; Grounding</b>	1	Technical Studies
MTH 020	<b>Math Fundamentals</b>	3	General Studies

**TC CERT A Aviation Sheetmetal Assembly TC-SHMTL\_ASM ASMA**

## Fall

Course #	Course Title	Credits	Function
AER 115	Aerostructures Assembly	6	Technical Studies
AVC 117	Hand & Power Tools	4	Technical Studies
AVC 127	Aviation Assembly Core	7	Technical Studies
MTH 020	Math Fundamentals	3	General Studies

## TC CERT C Aerospace Manufacturing Technology TC-AVIA\_MFG AVMF By Semester Type

## Outcomes

## Credits

Technical Studies	21
General Studies	3
Elective	7

Total Credits

31

## Fall

Course #	Course Title	Credits	Function
AER 115	Aerostructures Assembly	6	Technical Studies
AVC	Aviation Assembly Core	7	Elective
MTH 020	Math Fundamentals	3	General Studies

## Spring

Course #	Course Title	Credits	Function
AVC 103	Geometric Dimensioning & Tolerancing	1	Technical Studies
AVC 105	Aircraft Familiarization	1	Technical Studies
AVC 107	Fundamentals for Aerospace Manufacturing	1	Technical Studies
AVC 108	Aircraft Systems & Components	4	Technical Studies
AVC 117	Hand & Power Tools	4	Technical Studies
AVC 125	Bonding and Grounding	1	Technical Studies
AVC 150	Human Factors	1	Technical Studies
CFT 101	Introduction to Composites	2	Technical Studies

## Aviation Core

<b>Course #</b>	<b>Course Title</b>	<b>Credits</b>	<b>Function</b>
AVC 127	<b>Aviation Assembly Core - or all of the following courses</b>		Elective
AVC 102	<b>Precision Instruments</b>		Elective
AVC 104	<b>Quality Control Concepts</b>		Elective
AVC 110	<b>Safety/OSHA 10</b>		Elective
AVC 112	<b>Blueprint Reading</b>		Elective
AVC 120	<b>Introduction to Sealing</b>		Elective
AVC 140	<b>Electrical Bonding &amp; Grounding</b>		Elective