AMMOP Course Outline 2023-24

(Timelines are approximate and are subject to change.)

ATTENDANCE POLICY

- All AMMOP students will be required to sign a "Student Requirement" contract which will outline the requirements of all AMMOP students throughout the program duration.
- You are allowed **(2) absences** for the entire school year. Upon the **3rd unexcused absence**, your attendance will be reviewed and you **MAY BE REMOVED** from the course. If you are going to be absent, you are responsible for contacting via TEAMS:

Mr. Tapley or @ 786.1401,

YOU MUST CONTACT THE MAIN OFFICE IF YOU ARE ABSENT

ASSESSMENT POLICY

All sections will be marked according to the following weighing parameters:

- **Practical** – **70%**
- **Theory** – **30%**

- Grade point average assessed on a cumulative basis.
- All assignments/exercises must be complete by the required due date. Not adhering to these due dates can result in the **removal from the program**.
- Passing mark is **70% average** between the **Aerospace Technology and Metal Working** components of the program.
- You will be given 3 Student Performance Reviews TBA.

Credit Hours & High School Credits	
Machining Technology Credits	220 Credit Hours or 2 High School Credits
Aviation Technology Credits	220 Credit Hours or 2 High School Credits
Work Experience Component	110 Credit Hours or 1 High School Credit
TOTAL CREDITS	**550 Credit Hours or 5 High School Credits**

TOWES TESTING (Test of Workplace Essential Skills)

- TOWES is a **requirement** to gain employment in Manitoba's major aerospace companies such as *Boeing, Standard Aero and Magellan Aerospace*.
- A score of **3** or above in **ALL THREE CATAGORIES**, is the minimum requirement to achieve a passing grade. (Numeracy, Document Use and Reading Text)
- You are required to attend **MANDATORY TOWES** preparation provided by Workplace Education Manitoba's (WEM) TOWES drop in center.
- **TOWES** test will be administered for those who are deemed ready by WEM

MICROSOFT TEAMS (TO BE SET UP FIRST WEEK OF IN CLASS LEARNING)

This is your online coursework hub. You will access all material and submit assignments with this application. This application will be used to access all course material when not in the school. All students must have access to a computer or other device.

WE WILL USE THIS ON A DAILY BASIS & YOU WILL BE REQUIRED TO USE Microsoft Teams WHEN YOU ARE NOT AT TEC VOC ATTENDING CLASS.

AMMOP Aerospace and Aviation Technology Course Outline (Course Code: AV544V2S/AV562V4S)

SECTION	Description
1 (2 weeks)	Learning with ICT Students will engage in computer application usage in industry with emphasis on the Microsoft Office Suite. Word, PowerPoint, Excel and Microsoft TEAMS.
2 (2 weeks)	Theory of Flight • Physics of Flight • Aerodynamics • Principles of Flight
3 (1 week)	Aircraft Components & Functions (OCT) • Fixed wing aircraft salient features • Flight control systems • Primary & Secondary flight controls
4 (2 weeks)	Composite Fabrication • WHMIS CERTIFICATION • Introduction to composite materials • Sandwich Panel Construction Process
5 (2 days)	Composite Repair • Introduction to composite repair techniques • Sandwich panel repair procedure
6 (2 weeks)	Basic Electrical • Electrical Principles • Circuit Fundamentals • Troubleshooting
7 (3 weeks)	Powerplant Fundamentals • Piston Engine Theory • Piston Engine Teardown and Rebuild • Gas Turbine Theory and Operation • Gas Turbine
8 (1 week)	Non Destructive Testing • Concepts and principals of NDT • Theory of Visual, LPI/FPI, MPI, ECI, Ultrasonic, Radiography • Practical LPI

9 (2 Weeks)	Industry Standards
	• Lockwire techniques for aviation hardware
	• Procedural standards
	  ○ Silicone, sealants and adhesives
	  ○ Buffing, polishing and sanding techniques
	  ○ Component cleaning techniques
	• Lean Manufacturing and 5S concepts and standards
	• Ethics and Integrity in Aviation and Aerospace
	• Human Factors
	• Aviation governing bodies
	• Hierarchy of maintenance, manufacturing and overhaul documents
	  ○ AD's, SB's, OEM Manuals and CP's

AMMOP Aerospace Metal Manufacturing & Fabrication Course Outline (Course Code: MT842V2S/MT857V4S)

SECTION	Description
1 (2 weeks)	Numeracy and Applied Mathematics • Whole numbers, Decimal Numbers, Fractions, Percentages • Measurement Conversions • Ratios and Proportions • Degree, Minute and Seconds Angular Measurement • Geometric Shapes • Trigonometry • Basic Graphing • Manufacturing Applied Mathematics • Precision and linear measurements'
2 (3 days)	Health & Safety, Shop Organization • Personal Safety • Machine/Equipment Safety • House Keeping Practices
3 (2 weeks)	Blueprint Fundamentals, Interpretation & Geometric Dimensioning and Tolerances • Isometric and Orthographic Views • Introduction to drafting • Blueprint reading and interpretation • Introduction to **CAD and CAM** software • Introduction to Coordinate Measuring Systems and measurement plans **CMM**
4 (2 days)	Introduction to Machine Saw Operations • Vertical and Horizontal Band Saws operation
5 (2 days)	Introduction to Drilling Operations • Sharpening twist drills • Cutting through mild steel plates • Drill press vice set up and operation Drill press accessories
6 (3 weeks)	Introduction to Machining Hand Tools and Techniques: • Precision Measuring • Layout techniques • Filing, hacksawing, sanding, grinding and buffing techniques
7 (3 weeks)	Introduction to Bench Sheet Metal • Identification of sheet metal stock material • Use of layout, measurement and metal cutting tools • Use of metal fabrication equipment; squaring shear, bar folder, and bonding machine • Hand tools identification
8 (3 weeks)	Introduction to Milling Machines • Mill safety • Vice set up and alignment using dial indicators • Milling machine operations techniques
9 (1 week)	Introduction to CNC Milling and Lathe Machines • Set up of fixtures • Set up of mill and lathe tooling • Set up of work coordinates • Basic operation of CNC Milling and lathe machines
10 (2 weeks)	Introduction to Lathe & Turning Techniques • Mount work in 3 & 4 jaw chuck • Develop proficiency in facing, center drilling, parallel turning, knurling, tapering and external thread cutting

AMMOP Aerospace and Aviation Technology Course Outline (Course Code: LWTR4S)

SECTION	Description
1 (online pre-requisite)	Online AMMOP Upgrading & Industry Orientation • Numeracy, • Online Portfolio • Industry/company Research • Manufacturing Methods
2 (4 days)	Industry Exploration • Tours of SAL, Boeing, Magellan, Keewatin Air, Red River-Stevenson Aviation Campus • Along with other potential places of employment
3 (2 Days)	Mentorship (midpoint of course) • Students will participate in a "job shadowing" experience within the aerospace industry. • Based on industry availability and security clearances.
4 (3 WEEKS)	Work Experience (MAY – JUNE) (LWTR4S) • Students will go out for a 3 week job shadowing experience. • Students will have options of sites. • 110 Credit HRS and will be receive upon completion.