RRC POLYTECH Program and Course Catalogue

FULL-TIME | WINNIPEG LOCATIONS

Aircraft Maintenance Engineer

Overview

- January, August and October entry dates
- The total length of the program is 2 academic years
- Stevenson Campus
- Prepares students for Aircraft Maintenance Engineer (AME) Transport Canada License
- Meets accreditation requirements of the Canadian Aviation Regulations
- Accredited with the Canadian Council for Aviation and Aerospace (CCAA)
- This funded program usually fills with Manitoba residents.
- For Domestic Applicants: Out-of-province applicants may apply to this program but will only be considered should seats be available three months prior to the program start date. Alternately, consider the Apprentice Aircraft Maintenance Journeyperson program.
- International applicants, please visit Academic Program, Dates and Fees for a listing of programs for international students, current availability and online application instructions

Description
This program is designed to develop knowledge and skills in the maintenance of both large and small airplanes and helicopters.

It is Transport Canada approved to provide basic training towards an Aircraft Maintenance Engineer 'M' License.

Your time in the program is split between the study of aircraft maintenance, theory and practical projects.

Upon graduation, if you attained Transport Canada approved training status, you will receive a Red River College Polytechnic Diploma along with a corresponding Letter of Accreditation containing a Transport Canada number. You will also be granted nineteen (19) months of the forty-eight (48) months aviation maintenance experience, and the three (3) technical examinations required to obtain your AME license.

After graduation, you will be required to gain on-the-job work experience for the balance of the 48-month Transport Canada requirement and write the Canadian Aviation Regulations exam. Once you meet these requirements you will be eligible for a Transport Canada AME "M" License.

This program has been accredited by the Canadian Forces for its Non-Commissioned Member Subsidized Education Plan. For further information visit: National Defence and the Canadian Armed Forces.

Admission Requirements

Your Academic History
If your academic history includes any of the following, please visit My Education for important information: post-secondary studies at an institution other than Red River College Polytechnic; Modified (M), English as an Additional Language (E), or GED high school courses; or home schooling; international secondary (high school) studies.

The college requires transcripts verifying your complete academic history including any public or private high

school, college, university, or technical institute you have attended.

Please check the Program Overview page, to see if this program is for Manitoba residents only.

DOCUMENT SUBMISSION

Upload Through Your Future Student Account

- Scan your document(s) and save the file. Ensure you keep your original documents as the College may request to see them at any time.
- Go to apply.rrc.ca and log in.
- Click on your application, then Supplemental Items & Documents.

If you do not have a Future Student Account or require assistance, please contact our Student Service Centre at 204-632-2327.

Internationally Educated Applicants - visit www.rrc.ca/credentials for credential assessment information.

Submission of required documentation indicating proof of completion of admission requirements is due within 15 days of applying unless otherwise noted in the program's admission requirements.

However, if you apply within 6 weeks of the program start date, admission requirements are due within 5 days of applying.

This program requires completion of an assessment. We strongly advise you complete the assessment before applying to ensure you meet this program's required levels. If you choose to complete the assessment within 15 days after applying and do not achieve the required levels, your application will be cancelled without refund. See Regular Admission Requirement 3 for more information.

Regular Admission Requirements

1. High School Diploma
   - Submit proof of successful completion of or enrolment in the final year of a high school diploma from a recognized provincial or territorial Canadian high school or equivalent
   - If you provide proof of enrolment at time of application, your official final grades indicating successful completion must be submitted by July 15 for fall enrolment or by the deadline specified in your admission letter
   - If you are required to complete an English language assessment, do not submit your transcripts until requested to do so. See English Language Requirements (ELRs) for more information.
     and
2. English Language Requirements (ELRs)
   - Answer this question to determine if you meet this program's ELRs:
     Have I successfully completed 3 years of full-time high school (secondary) education in Canada, the United States, or an ELR exempt country where English was the language of instruction?
     - If YES, you meet English language requirements. Apply and then submit your transcripts* for review
       or
     - If NO, submit proof of meeting an ELRs option. If you choose the English language assessment option, review this program's approved assessments and required levels.
       or
     - If you completed all of your education in Canada, the United States, or an ELR exempt country in English but you did not graduate high school, submit your transcripts* for review.
   - * If your transcripts are from the USA or an ELR exempt country, we will assess an International Credentials Assessment Fee to be paid before your transcripts will be reviewed.

and

3. AMERA
    - Successful completion of the Aircraft Maintenance Engineer Readiness Assessment (AMERA) at the required levels
    - We strongly advise you complete the assessment before submitting your application to ensure you meet required levels
    - Extensions will not be granted to complete your assessment
    - Assessment results must be dated no more than two years prior to your application date

English Language Assessments

⚠ The College reserves the right to modify this information without notice or prejudice.
ASSESSMENT RESULTS MUST BE DATED NO MORE THAN TWO YEARS PRIOR TO YOUR APPLICATION DATE!

Approved English Language Assessments

English Language Assessment	Minimum Scores for Certificates, Diplomas and Advanced Diplomas, and Post Graduate Certificates, Post-graduate Diplomas	Minimum Scores for Bachelor Degrees and Creative Communication
CAEL Online or In-Person	Overall band score of 60	Overall band score of 70 and Writing of 60
IELTS Academic Level	Overall 6.0 and No band below 5.5	Overall 6.5 and No band below 6.0
Password Skills	Overall 6.0 and No band below 5.5	Overall 6.5 and No band below 6.0
LINC Certificate	7	8
Duolingo Language Test	115 and above+ with a min. of 95 in each section	125 and above with a min. of 100 in each section
New English for Academic and Professional Purposes	Successful completion of the program 5 (min 70%)	Successful completion of the program 5 (min 70%)
PTE	54 overall Min 50 in each skill	60 overall Min 55 in each skill band
TOEFL-ibt Academic Level	80 (20L, 20S, 19R, 21W)	90 (22L, 22S, 22R, 24W)
Academic English Program for University and College Entrance Program (AEPUCE)	Successful Completion	Successful Completion
CELBAN	N/A	N/A

Who Should Enrol?

If you have an interest in aircraft, are mechanically inclined, and take pride in completing tasks to exacting standards you may want to consider a career in aircraft maintenance.

There are many aspects to this career, making it an excellent choice for someone who enjoys variety in their work. Aircraft Maintenance Engineers work in many different types of environments and geographical locations including remote locations for long periods. Shift work including evenings, nights and weekends is common in this occupation.

Persons best suited to this career have a keen interest in mechanical devices and operating principles. The work is technical - servicing, inspecting, repairing, installing, and troubleshooting.

Required skills include excellent problem solving, good verbal and written communication, good comprehension and attention to detail.

Locations, Dates and Fees

Next Estimated Term 1 Start Date (subject to change)

Location	Start Date	
Stevenson	Aug 31, 2026	Apply Now

Costs (estimates only; subject to change)

Program/Student Fees	
Year 1	$7,473.00
Year 2	$7,473.00
Books and Supplies	
Year 1	$480.00
Other Fees	
Year 1	$2,500.00[1]
Program/Student Fees (International)	
Year 1	$15,991.00
Year 2	$15,991.00

[1] Tools; Coveralls or a Shop Coat; CSA Approved Safety Shoes; Discovery Flight. The laptop purchase is not included in these fees, please see the Computer/Laptop tab for more information.

Students may apply for financial assistance through the Manitoba Student Aid program. For general information on applying please call 204-945-6321 or 1-800-204-1685, or visit their website at www.manitobastudentaid.ca, which also includes an online application. For detailed information, please visit one of the RRC Polytech Student Service Centres or call 204-632-2327. Applicants requiring financial assistance should complete their student loan applications well in advance of the class start date.

Courses and Descriptions

Year 1	
Term 1	**Credit Hours**
AMEG-1003 Aircraft Ground Handling	3
AMEG-1005 Aircraft Hardware	4
AMEG-1007 Aircraft Structural Materials	4
AMEG-1011 Electrical Systems 1	4
AMEG-1024 Aviation Math and Physics	3
AMEG-1030	

Tools & Equipment

3

AMEG-1277
Hydraulic & Pneumatic Systems

4

AVIA-1009
Intro to CARs

0

AVIA-1058
Human Factors

1

AVIA-1060
Drawing

2

AVIA-1082
Structures, Assembly and Rigging 1

3

Term 2Credit Hours

AMEG-1004
Aircraft Wood & Fabric

2

AMEG-1009
Aircraft Weight & Balance

2

AMEG-1012
Electrical Systems 2

4

AMEG-1028
Airframe Fuel Systems

3

AVIA-1025
Turbine Engines 1

3

AVIA-1027
Ethics and Sustainability

2

AVIA-1039
Reciprocating Engines 1

3

AVIA-1053
Landing Gear

3

AVIA-1055
Rotary Wing Theory of Flight

2

AVIA-1064
Instruments

3

AVIA-1066
Ice & Rain Protection

2

AVIA-1083
Structures, Assembly and Rigging 2

2

Year 2

Term 3Credit Hours

AMEG-1010
Non-Destructive Testing

3

AMEG-1013 Electrical Systems 3	3
AMEG-1016 CARs (Canadian Aviation Regulations)	4
AMEG-1021 Environmental Systems	3
AMEG-1229 Dynamic Drive Systems	3
AVIA-1028 Turbine Engines 2	3
AVIA-1040 Reciprocating Engines 2	6
AVIA-1061 Metallic Structures	5
Term 4Credit Hours	
AMEG-1034 Propellers	4
AVIA-1031 Turbine Engines 3	5
AVIA-1042 Reciprocating Engines 3	6
AVIA-1056 Composites	2
AVIA-1059 Vibration Analysis	2
AVIA-1062 Maintenance Procedures	4
AVIA-1065 Avionics	3

AMEG-1003
Aircraft Ground Handling

Topics covered in the course are: how to safely perform ground handling and servicing of aircraft, and select and use appropriate fire extinguishers for fire suppression.

AMEG-1004
Aircraft Wood & Fabric

Students will learn to maintain aircraft wood structures and fabric covered aircraft including recovering.

Prerequisites:
Successful completion of all Term 1 courses.

AMEG-1005
Aircraft Hardware

Students will learn how to select and install aircraft hardware and ensure that installed hardware is certified

and traceable.

AMEG-1007
Aircraft Structural Materials

Students will learn to select proper materials for airframe repair and maintenance and assess and control corrosion.

AMEG-1009
Aircraft Weight & Balance

Students will learn to weight aircraft as per manufacturers' recommendations, compute centre of gravity, prepare a new or revised weight and balance and amend the equipment list as required.

Prerequisites:
Successful completion of all Term 1 courses.

AMEG-1010
Non-Destructive Testing

Students will learn how to select the appropriate type of non-destructive testing inspection process to inspect aircraft structures or components.

Prerequisites:
Successful completion of all Term 1 and Term 2 courses.

AMEG-1011
Electrical Systems 1

Students will be introduced to direct current electrical theory, including atomic structure, electrostatics, and magnetism as applicable to aircraft electrical systems. Students will explore a variety of aircraft storage batteries, electrical measuring devices, and complete practical projects involving aircraft batteries, Ohm's and Kirchhoff's laws.

AMEG-1012
Electrical Systems 2

Building on the knowledge learned in AMEG-1011 Electrical Systems 1, students will continue their studies of electrical systems by exploring aircraft which make use of alternating current electricity, inductive and capacitive devices, and a variety of other semi-conductors. Students will examine aircraft electrical generators, alternators, voltage regulation, and will complete practical projects with electrical measuring devices, and various aircraft electrical generating components and systems.

Prerequisites:
Successful completion of all Term 1 courses.

AMEG-1013
Electrical Systems 3

Continuing the study of aircraft electrical systems with the knowledge learned in AMEG-1011 Electrical Systems 1 and AMEG-1012 Electrical Systems 2, students will explore circuit installation and wiring practices, the architecture of aircraft electrical systems, and motors. Practical projects will include troubleshooting and fault isolation of various aircraft power generation and distribution systems.

Prerequisites:
Successful completion of Term 1 and Term 2 courses.

AMEG-1016
CARs (Canadian Aviation Regulations)

Students will learn the applicable Canadian Aviation Regulations with regard to aircraft maintenance requirements.

Prerequisites:

Successful completion of all Term 1 and Term 2 courses.

AMEG-1021
Environmental Systems

Students will learn to service and maintain aircraft environmental systems including heating, cooling, pressurization and oxygen.

Prerequisites:
Successful completion of all Term 1 and Term 2 courses.

AMEG-1024
Aviation Math and Physics

Students will use applied mathematics and physics as problem-solving tools in day-to-day aircraft maintenance activities.

AMEG-1028
Airframe Fuel Systems

Students will learn how to safely service an aircraft with the correct rated fuel. Students will also be taught general maintenance of aircraft fuel systems.

Prerequisites:
Successful completion of all Term 1 courses.

AMEG-1030
Tools & Equipment

Students will learn how to identify, select and safely use appropriate tools and equipment in aircraft maintenance.

AMEG-1034
Propellers

Students will learn to maintain aircraft propellers and related systems excluding overhaul.

Prerequisites:
Successful completion of all Term 1, Term 2 and Term 3 courses.

AMEG-1229
Dynamic Drive Systems

Students will learn how to maintain and service helicopter dynamic drive trains.

Prerequisites:
Successful completion of Term 1 and Term 2 courses.

AMEG-1277
Hydraulic & Pneumatic Systems

Students will learn how to safely service and maintain aircraft hydraulic and pneumatic systems.

AVIA-1009
Intro to CARs

Introduction to the Canadian Aviation Regulations identifies the basic framework of the Canadian Aviation Regulations, enabling participants to navigate the standards and regulations associated with Canadian civil aviation.

AVIA-1025
Turbine Engines 1

Students will learn the history of the development and theory of operation of aircraft turbine engines.

Prerequisites:

Successful completion of all Term 1 courses.

AVIA-1027
Ethics and Sustainability

This introductory-level course will introduce students to the foundation of ethical behaviour at work by employing critical thinking and demonstrating professional behaviour. The objective is to raise students' awareness of the importance of personal integrity in their chosen field.

Prerequisites:
Successful completion of all Term 1 courses.

AVIA-1028
Turbine Engines 2

Students will learn the theory of operation of aircraft turbine engines related systems and their components.

Prerequisites:
Successful completion of Term 1 and Term 2 courses.

AVIA-1031
Turbine Engines 3

Students will perform maintenance tasks on aircraft gas turbine engines and their related systems.

Prerequisites:
Successful completion of all Term 1, Term 2 and Term 3 courses.

AVIA-1039
Reciprocating Engines 1

Students will learn the history, development, and theory of operation of aircraft reciprocating engines.

Prerequisites:
Successful completion of all Term 1 courses.

AVIA-1040
Reciprocating Engines 2

Students will learn the theory of operation of aircraft reciprocating engine fuel systems, induction, supercharging, exhaust systems, and lubrication systems.

Prerequisites:
Successful completion of Term 1 and Term 2 courses.

AVIA-1042
Reciprocating Engines 3

Students will learn the theory of operation of aircraft reciprocating engine starting and ignition systems, and will learn reciprocating engine maintenance procedures. Students will perform maintenance tasks on aircraft reciprocating engines.

Prerequisites:
Successful completion of all Term 1, Term 2 and Term 3 courses.

AVIA-1053
Landing Gear

Students will learn how to service and maintain landing gear systems and related components including wheels, brakes, indication systems and warning systems.

Prerequisites:
Successful completion of all Term 1 courses.

AVIA-1055
Rotary Wing Theory of Flight

Students will learn helicopter theory of flight in relation to the rigging and maintenance of helicopter flight control systems. Students will also learn how to inspect helicopter structures.

Prerequisites:
Successful completion of all Term 1 courses.

AVIA-1056
Composites

This course allows the student to learn the basic principles of aircraft composites. The student will identify basic composite materials and equipment and perform aircraft composite repair techniques.

Prerequisites:
Successful completion of all Term 1, Term 2 and Term 3 courses.

AVIA-1058
Human Factors

Meets requirements of Human Factors Training
• Includes methods of dealing with stress, fatigue, complacency and distraction
• Enhances communication and safety methods
• Examines efficiency in the workplace
• Certificate of Attendance for Human Factors Training is issued as a result of attending the full 14 hour session

AVIA-1059
Vibration Analysis

Students will learn to statically and dynamically balance propeller, rotor systems and dynamic drive systems.

Prerequisites:
Successful completion of all Term 1, Term 2 and Term 3 courses.

AVIA-1060
Drawing

Students will learn to read and interpret common types of aircraft technical drawings encountered in day-to-day aircraft maintenance or repair and create sketches or drawings that accurately transmit technical information.

AVIA-1061
Metallic Structures

Students will learn to maintain aircraft metallic structures including fabrication of component parts.

Prerequisites:
Successful completion of all Term 1 and Term 2 courses.

AVIA-1062
Maintenance Procedures

Students will learn how to perform appropriate inspection procedures and documentation for aircraft maintenance in accordance with CARs and applicable reference manuals.

Prerequisites:
Successful completion of all Term 1, Term 2 and Term 3 courses.

AVIA-1064
Instruments

Students will learn how to maintain basic aircraft instrumentation systems excluding component overhaul.

Prerequisites:
Successful completion of all Term 1 courses.

AVIA-1065

Avionics

Students will learn how to maintain basic aircraft avionics systems excluding component repair.

Prerequisites:
Successful completion of all Term 1, Term 2 and Term 3 courses.

AVIA-1066
Ice & Rain Protection

Students will learn how to maintain ice and rain protection systems.

Prerequisites:
Successful completion of all Term 1 courses.

AVIA-1082
Structures, Assembly and Rigging 1

Students will learn the theory of flight for fixed wing aircraft and the construction of fixed wing aircraft and its components.

AVIA-1083
Structures, Assembly and Rigging 2

Students will perform maintenance tasks related to the rigging and maintenance of airplane flight control systems and its structures.

Prerequisites:
Successful completion of all Term 1 courses.

Computer/Laptop Requirements

Online learning is a critical component of course delivery in all Red River College Polytechnic programs. To ensure each student has the tools they need to achieve their academic goals, all Red River College students require, at a minimum:

- Operating System: Windows 10;
- Capable to run Microsoft Office 365:

- 1.6 GHz or faster, 2-core
- Memory: 4 GB RAM; 2 GB RAM (32-bit)
- Hard disk: 4 GB of available disk space
- Display: 1280 x 768 screen resolution
- Graphic: Graphics hardware acceleration requires DirectX 9 or later, with WDDM 2.0 or higher for Windows 10
- Browser: The current version of Microsoft Edge, Internet Explorer, Safari, Chrome, or Firefox.

- 10-inch screen minimum;
- Front-facing camera
- WI-FI capable.

Please note that any anticipated costs are not included in Books and Supplies estimates.

Recognition of Prior Learning

Recognition of Prior Learning (RPL) is a process which documents and compares an individual's prior learning gained from prior education, work and life experiences and personal study to the learning outcomes in College courses/programs. For more information, please visit www.rrc.ca/rpl.

Employment Potential

Students may find opportunities with these potential employers in Canada:

- National and Regional Airlines
- Helicopter Operations
- Air Charter Organizations
- Nationally approved Aircraft Maintenance Organizations (AMOs)
- Aerospace Manufacturers
- Propeller Overhaul Shops
- Reciprocating Engine Shops
- Turbine Engine Overhaul Shops
- Aircraft Overhaul Shops

Job Titles

- Aircraft Maintenance Technician
- Aviation/Aerospace Sheet Metal Worker
- Aircraft Assembler
- Quality Assurance
- Aerospace Inspector
- Aerospace Technician
- Aerospace Production Worker
- Aerospace Assembly Worker
- Turbine Engine Technician

Academic Advising Service

Our academic advising service can provide information about our full-time programs, explain program admission requirements, and help you select the right program to meet your career and academic goals. We can also connect you with helpful people, resources, and supports.

- For more information visit academic advising.
- If you are an Indigenous student, you can contact an Indigenous Admissions Advisor.
- If you are an international student, you can contact International Education.

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