



8562

APPLIED AVIATION AND  
AEROSPACE TECHNOLOGIES  
(12D)

40S/40E/40M

An Aviation and Aerospace Technologies Course



# 8562: APPLIED AVIATION AND AEROSPACE TECHNOLOGIES (12D) 40S/40E/40M

## Course Description

Applied Aviation and Aerospace Technologies is intended for students transitioning from aviation and aerospace technologies. Curriculum content provides students the opportunity to synthesize their previously learned skills and knowledge to facilitate entry into the workforce. Topics include the following:

- TOWES certification
- WHMIS certification
- ethical and legal requirements
- human factors

Cross-curricular learning outcomes, or essential skills from subject areas including, but not limited to, information and communication technologies, science, English language arts, and mathematics, are to be integrated into the authentic learning activities of the course.

The curriculum is not sequential. For instructional purposes, the sequence of learning outcomes can vary based on the learning activities within the course.

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**Goal 1:** Describe and apply appropriate **health and safety** practices for aerospace technologies.

**GLO 1.1:** Describe and apply appropriate **health and safety** practices for aerospace technologies.

SLO 12D.1.1.1 Describe and apply appropriate health and safety practices for aviation and aerospace technologies.

SLO 12D.1.1.2 Complete WHMIS certification.

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**Goal 2:** Demonstrate comprehension of the **principles of flight**, as they apply to aviation and aerospace technologies.

**GLO 2.1:** Demonstrate an understanding of **aerodynamics, control, and stability** in **fixed-** and **rotary-wing** aircraft.

SLO 12D.2.1.1 Demonstrate an understanding of aerodynamics, control, and stability as they apply to aviation and aerospace technologies.

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**Goal 3:** Demonstrate an understanding of the **major components of an aircraft** and their **functions**.

**GLO 3.1:** Demonstrate an understanding of the **major components of an aircraft** and their **functions**.

SLO 12D.3.1.1 Demonstrate an understanding of the major components of an aircraft and their functions.

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**Goal 4:** Demonstrate comprehension of **aircraft systems**.

**GLO 4.1:** Describe **aircraft systems** and their purposes.

SLO 12D.4.1.1 Demonstrate an understanding of aircraft systems and their purposes.

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**Goal 5:** Demonstrate the safe and appropriate **operation of equipment and tools**.

**GLO 5.1:** Describe the safe and appropriate **management of equipment and tools**.

SLO 12D.5.1.1 Demonstrate the safe and appropriate cleaning, storage, and management of equipment and tools used in aviation and aerospace technologies.

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**GLO 5.2:** Demonstrate the **operation of tools and equipment** to fabricate **metallic** parts and projects.

SLO 12D.5.2.1 Demonstrate the operation of tools and equipment to fabricate metallic parts and projects.

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**GLO 5.3:** Demonstrate the **operation of tools and equipment** to fabricate **non-metallic** parts and projects.

SLO 12D.5.3.1 Demonstrate the operation of tools and equipment to fabricate non-metallic parts and projects.

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**Goal 6:** Demonstrate comprehension of the properties and applications of various **materials and consumables** used in the aviation and aerospace industry.

**GLO 6.1:** Explain the **properties** of various **materials and consumables** used in the aviation and aerospace industry.

SLO 12D.6.1.1 Demonstrate an understanding of material properties as they apply to aviation and aerospace technologies.

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**GLO 6.2:** Describe **applications** of the various aerospace **materials and consumables**.

SLO 12D.6.2.1 Describe applications of the various materials and consumables used in the aviation and aerospace industry.

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**Goal 7: Fabricate parts and components** for use in the aviation and aerospace industry.

**GLO 7.1:** Fabricate **metallic** parts.

No applicable SLOs.

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**GLO 7.2:** Fabricate **non-metallic** parts.

No applicable SLOs.

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**GLO 7.3:** Fabricate **electrical/electronic** components.

No applicable SLOs.

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**Goal 8: Describe and demonstrate the transferable cross-curricular skills** as they pertain to **aviation and aerospace technologies**.

**GLO 8.1: Read, interpret, and communicate** information relevant to aviation and aerospace technologies.

SLO 12D.8.1.1 Communicate effectively with supervisors and aviation personnel.

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**GLO 8.2:** Acquire and organize information using **information and communication technology**.

SLO 12D.8.2.1 Demonstrate familiarity with online job application processes.

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**GLO 8.3:** Apply **mathematical** knowledge and skills related to aviation and aerospace technologies.

No applicable SLOs.

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**GLO 8.4:** Apply **scientific** knowledge and skills related to aviation and aerospace technologies.

No applicable SLOs.

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**Goal 9:** Describe **career opportunities** in aviation and aerospace technologies and associated fields.

**GLO 9.1:** Describe **education** and **career opportunities** and **professional organizations** in aviation and aerospace technologies and associated fields.

SLO 12D.9.1.1 Create a resumé for the purpose of obtaining employment in aviation and aerospace technologies and associated fields.

SLO 12D.9.1.2 Create an employment portfolio for the purpose of obtaining employment in aviation and aerospace technologies and associated fields.

SLO 12D.9.1.3 Research career opportunities in aviation and aerospace technologies and associated fields.

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**Goal 10:** Demonstrate an awareness of **sustainability** as it pertains to aviation and aerospace technologies.

**GLO 10.1:** Describe the impact of the aviation and aerospace industry on **human health and well-being**.

SLO 12D.10.1.1 Discuss basic concepts of human factors (Dirty Dozen) as applied to aviation and aerospace technologies.

**GLO 10.2:** Describe the aviation and aerospace industry's sustainability practices and impact on the **environment**.

SLO 12D.10.2.1 Demonstrate responsible sustainability practices.

**GLO 10.3:** Describe **sustainable business practices** within the aviation and aerospace industry.

SLO 12D.10.3.1 Describe how the manufacturing industry responds to changes in the global economy (e.g., fluctuating currencies, trade agreements, fluctuating demand in other countries) and how this response affects the local community and/or the province as a whole (e.g., in terms of economic opportunities or risks for the local and/or provincial population).

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**Goal 11:** Demonstrate an awareness of the **ethical and legal standards** as they pertain to aviation and aerospace technologies.

**GLO 11.1:** Practise the **ethical and legal standards** as they pertain to aviation and aerospace technologies.

SLO 12D.11.1.1 Adhere to ethical and legal standards within an aviation and aerospace environment.

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**Goal 12:** Demonstrate **employability skills** related to aviation and aerospace technologies.

**GLO 12.1:** Demonstrate **employability skills** related to aviation and aerospace technologies.

SLO 12D.12.1.1 Define TOWES (Test of Workplace Essential Skills), and state how it relates to employment in the aviation and aerospace industry.

SLO 12D.12.1.2 Apply the three domains of TOWES (text reading, document use, and numeracy) in learning activities.

SLO 12D.12.1.3 Demonstrate the Global Industry Standard of essential skills for employees.

SLO 12D.12.1.4 Demonstrate the skills outlined in the Conference Board of Canada's *Employability Skills 2000+* for employees.

SLO 12D.12.1.5 Identify critical skills needed for employability in today's workplace.

SLO 12D.12.1.6 Outline skills required for a specific career path in the aviation and aerospace industry.

SLO 12D.12.1.7 Identify employers' expectations to foster appropriate working conditions and dynamics in the aviation and aerospace industry.

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**Goal 13:** Describe the **evolution** of aviation and aerospace technologies, including **technological progression** and **emerging trends**.

**GLO 13.1:** Describe the **evolution** of aviation and aerospace technologies, including **technological progression** and **emerging trends**.

No applicable SLOs.

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