



9197

INTRODUCTION TO AVIATION
(10)

20S/20E/20M

A Pilot Ground School Course

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Course Description

Students are introduced to the field of aviation. They explore a variety of topics, including aerodynamics, aircraft mechanics, air law, meteorology, navigation, and human factors.

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

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

SLO 10.1.1.1 Demonstrate an understanding of safe practices.

SLO 10.1.1.2 Demonstrate adherence to safe practices.

Goal 2: Demonstrate an understanding of **human factors** in aviation.

GLO 2.1: Demonstrate an understanding of **human factors** in aviation.

SLO 10.2.1.1 Demonstrate an awareness of the importance of safety in the aviation industry.

SLO 10. 2.1.2 Demonstrate an awareness of human factors and their place in aviation.

Goal 3: Demonstrate the use and management of **materials, tools,** and **equipment.**

GLO 3.1: Demonstrate the use and management of **materials, tools,** and **equipment.**

SLO 10.3.1.1 Demonstrate the appropriate use and management of materials, tools, and equipment.

SLO 10.3.1.2 Demonstrate the ability to follow operating procedures when using simulators.

Goal 4: Demonstrate an understanding of **flight** and **aerodynamics.**

GLO 4.1: Demonstrate an understanding of **flight** and **aerodynamics.**

SLO 10.4.1.1 Demonstrate an awareness of aerodynamics and its relationship to flight.

- SLO 10.4.1.2 Demonstrate an awareness of the theory of flight, including Bernoulli's principle.
- SLO 10.4.1.3 Demonstrate an awareness of the four forces that act on an airplane: thrust, drag, weight, and lift.
- SLO 10.4.1.4 Demonstrate an awareness of the following: wing design, lift, pressure differentials, angle of attack, centre of pressure, and stalls.
- SLO 10.4.1.5 Demonstrate an awareness of the **relationships** among the following: wing design, lift, pressure differentials, angle of attack, centre of pressure, and stalls.
- SLO 10.4.1.6 Use a model airplane to explain the principles of flight.
- SLO 10.4.1.7 Demonstrate the ability to apply Bernoulli's principle to aircraft design and construction.

Goal 5: Demonstrate an understanding of **engines, airframes, systems, and instruments.**

GLO 5.1: Demonstrate an understanding of **engines, airframes, systems, and instruments.**

- SLO 10.5.1.1 Demonstrate an awareness of various types of engines.
- SLO 10.5.1.2 Demonstrate an awareness of the operation of two-stroke and four-stroke internal combustion engines.
- SLO 10.5.1.3 Demonstrate an awareness of various types of airframes.
- SLO 10.5.1.4 Demonstrate an awareness of fuel systems.
- SLO 10.5.1.5 Demonstrate an awareness of controls and control surfaces.
- SLO 10.5.1.6 Demonstrate an awareness of instruments.

Goal 6: Demonstrate an understanding of **meteorology** and the atmosphere.

GLO 6.1: Demonstrate an understanding of **meteorology** and the atmosphere.

- SLO 10.6.1.1 Demonstrate an awareness of the importance of meteorology in flight planning.

Goal 7: Demonstrate an understanding of **navigation, aerodromes, and airports.**

GLO 7.1: Demonstrate an understanding of **navigation.**

- SLO 10.7.1.1 Demonstrate an understanding of the use of maps and charts in aviation.

- SLO 10.7.1.2 Demonstrate an understanding of map and chart symbols and scales.
- SLO 10.7.1.3 Demonstrate an understanding of and the ability to perform calculations related to time, speed, distance, and fuel consumption.
- SLO 10.7.1.4 Demonstrate an understanding of flight planning.
- SLO 10.7.1.5 Demonstrate the ability to create flight logs.
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GLO 7.2: Demonstrate an understanding of **aerodromes** and **airports**.

- SLO 10.7.2.1 Demonstrate an awareness of aerodromes and airports, including the following features:
- location
 - symbols
 - numbering of runways
 - identification codes
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Goal 8: Describe and apply transferable **cross-curricular** knowledge and skills (of literacy, numeracy, and the sciences) as they apply to aviation.

GLO 8.1: Describe and apply **literacy** knowledge and skills related to aviation.

- SLO 10.8.1.1 Demonstrate an awareness of the vocabulary associated with aviation.
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GLO 8.2: Describe and apply **numeracy** knowledge and skills related to aviation.

- SLO 10.8.2.1 Demonstrate the ability to read, understand, and communicate numerically.
- SLO 10.8.2.2 Apply numeracy skills and knowledge to aviation.
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GLO 8.3: Describe and apply knowledge and skills from the **sciences** that relate to aviation.

- SLO 10.8.3.1 Demonstrate an awareness of the scientific knowledge and skills that relate to aviation.

Goal 9: Demonstrate an understanding of the **ethical and legal standards** that pertain to aviation.

GLO 9.1: Demonstrate an understanding of the **ethical standards** that pertain to aviation.

SLO 10.9.1.1 Demonstrate an awareness of ethics.

GLO 9.2: Demonstrate an understanding of **air law**.

SLO 10.9.2.1 Demonstrate an awareness of the importance of regulations, including those from Transport Canada, in the aviation industry.

Goal 10: Demonstrate **employability skills**.

GLO 10.1: Demonstrate basic **employability skills**.

SLO 10.10.1.1 Demonstrate regular and punctual attendance.

SLO 10.10.1.2 Communicate respectfully and effectively with others.

SLO 10.10.1.3 Take responsibility for own actions.

SLO 10.10.1.4 Demonstrate adaptability, initiative, and effort.

SLO 10.10.1.5 Demonstrate teamwork skills.

SLO 10.10.1.6 Demonstrate the ability to stay on task and use time effectively.

SLO 10.10.1.7 Demonstrate the responsible use of wireless communication devices.

GLO 10.2: Demonstrate **critical thinking** skills.

SLO 10.10.2.1 Demonstrate an awareness of the importance of critical thinking in the aviation industry.

GLO 10.3: Demonstrate an understanding of **culture** in the workplace.

SLO 10.10.3.1 Define *culture* and demonstrate an awareness of it.

Goal 11: Demonstrate an understanding of **sustainability** as it pertains to aviation.

GLO 11.1: Demonstrate an understanding of the impact of the aviation industry on **human sustainability** and on the health and well-being of aviation workers and passengers.

SLO 10.11.1.1 Demonstrate an awareness of the contributions that aviation has made to society.

GLO 11.2: Demonstrate an understanding of the aviation industry's **sustainability practices** and impact on the environment.

SLO 10.11.2.1 Demonstrate an awareness of the aviation industry's sustainability practices and impact on the environment.

Goal 12: Demonstrate an understanding of the **scope** of, and **education and employment opportunities** in, the aviation industry.

GLO 12.1: Demonstrate an understanding of the **scope** of the aviation industry.

SLO 10.12.1.1 Demonstrate an awareness of the scope of the aviation industry locally, regionally, nationally, and internationally.

GLO 12.2: Demonstrate an understanding of **education and employment opportunities** in the aviation industry.

SLO 10.12.2.1 Demonstrate an awareness of education and employment opportunities in the aviation industry.

Goal 13: Demonstrate an understanding of the **evolution** of aviation, including its **technological progression and emerging trends**.

GLO 13.1: Demonstrate an understanding of the **evolution** of aviation, including its **technological progression and emerging trends**.

SLO 10.13.1.1 Demonstrate an understanding of the evolution of aviation.
