

Erindale College

Assessment Period:	2021 S2
Course:	FLIGHT
Unit:	Commercial Aviation (1.0)
Accreditation:	T
Year:	11

Unit Goals

- demonstrate depth and breadth of scientific knowledge relevant to the aviation industry
- critically research, analyse and evaluate aviation law and procedures from a variety of sources to solve practical and theoretical problems of aircraft operation
- investigate the relationship between requirements outlined in legislation and a range of operational publications
- apply an understanding of official documents such as Flight Notifications and SAR times to flight planning requirements

Content Description

Science Inquiry Skills

- identify, research and construct questions for investigation concerning the design and structure of aircraft; propose hypotheses; and predict possible outcomes arising from various designs
- represent and organise data in meaningful and useful ways, including using appropriate SI units and symbols, to identify trends, patterns and relationships
- investigate a range of aviation and media texts, and evaluate processes, claims and conclusions by considering the quality of available evidence; and use reasoning to construct scientific arguments
- select, use and interpret appropriate mathematical models, including graphs and tables of data, to solve problems and make predictions concerning aircraft performance

Science as a Human Endeavour

- analyse and critique the importance of aviation law to aircraft operations and safety
- analyse and describe the roles of Air Traffic Control and CENSAR in the maintenance of safety and the obligation on pilots to maintain safe operations
- critique the ethical, legal and environmental issues that influence the safe use of aircraft
- identify social, economic, cultural and ethical considerations that have influenced the adoption of new technology in aviation
- apply commercial aviation knowledge to predict and solve problems associated with the various classifications of commercial flying
- understand the practical and theoretical problems faced by commercial pilots using scientific methods to solve basic fuel and time problems associated with flying

Science Understanding

- explain the differences between licence types and the requirements for IFR flight
- describe and calculate the differences between MACH number and other measures of speed
- describe the effect of bow waves in supersonic flight and explain how the sonic boom is generated using principles drawn from the Doppler effect
- analyse and apply complex loading and take-off performance charts (CPL level) for fixed-wing and

rotary wing aircraft

- calculate climb, cruise and descent performance for specific aircraft and apply to flight planning
- calculate apply Equi-Time Points and Point of No Return (ETP's and PNR's) to flight planning tasks
- investigate and explain the special design features related to multi engine aircraft and the consequent operational requirements
- discuss the application of Air Law to specific operational requirements and limitations
- identify factors in effective decision-making and cockpit workload management
- research and explain helicopter structures and demonstrate understanding of the benefits of different planforms
- compare various anti-torque configurations and controls such as the cyclic, the collective, the anti-torque pedals, and the throttle to fixed-wing aircraft
- analyse the effects of torque and gyroscopic effects on rotary-wing craft; including precession, auto rotation and rotational velocities
- demonstrate an understanding of lift and drag for rotor blades and pressure patterns produced by rotors
- research and explain the effect of factors such as translational lift, transverse flow effect and retreating blade stall on aircraft performance
- investigate the operational reasons for airspace limitations, altitudes, taxiing and circuit procedures for fixed-wing and rotary wing aircraft

Assessment Tasks

Name	Due Date	Weighting
Assignment 1	30 August	20%
Test 1	1 September	30%
Assignment 2	8 November	20%
Test 2	10 November	30%

School Assessment Information

For penalties for late and non-submission of work

See [BSSS Policy and Procedure Manual 4.3.10](#) for further information.

For academic integrity

See [BSSS Policy and Procedure Manual 4.3.12](#) for further information.

For appeals processes

See [BSSS Policy and Procedure Manual 7.2](#) for further information.

For moderation procedures (internal and external)

See [BSSS Policy and Procedure Manual 5](#) for further information.

For meshing procedures

See [BSSS Policy and Procedure Manual 5.4.1](#) for further information.

For method of unit score calculation

See [BSSS Policy and Procedure Manual 4.3.6.2](#) for further information.

For procedures for calculating course scores

See [BSSS Policy and Procedure Manual 4.3.13.2](#) for further information.

Achievement Standards for FLIGHT T - Year 11

	<i>A student who achieves an A grade typically</i>	<i>A student who achieves a B grade typically</i>	<i>A student who achieves a C grade typically</i>	<i>A student who achieves a D grade typically</i>	<i>A student who achieves an E grade typically</i>
Concepts, Models & Applications	<ul style="list-style-type: none"> critically analyses the fundamental properties and functions of system components, processes and interactions, and the effects of factors across a range of scales evaluates the nature, functions, limitations and applications of theories and models using evidence, in unfamiliar contexts analyses evidence with reference to models and/or theories, and develops evidence-based conclusions and evaluates limitations 	<ul style="list-style-type: none"> analyses the fundamental properties and functions of system components, processes and interactions, and the effects of factors across a range of scales analyses the nature, functions, limitations and applications of theories and models using evidence, in familiar contexts assesses evidence with reference to models and/or theories, and develops evidence-based conclusions and discusses limitations 	<ul style="list-style-type: none"> explains the fundamental properties and functions of system components, processes and interactions and the effects of factors across a range of scales explains the nature, functions, limitations and applications of theories and models using evidence, in familiar contexts explains evidence with reference to models and/or theories, and develops evidence-based conclusions and identifies limitations 	<ul style="list-style-type: none"> describes the fundamental properties and functions, and with some description of system components, processes and interactions, and the effects of factors across a range of scales describes the nature, functions, limitations and applications of theories and models with supporting evidence describes evidence, and develops conclusions with some reference to models and/or theories 	<ul style="list-style-type: none"> identifies the fundamental properties and functions of system and identifies components, processes and interactions, and the effects of factors across a range of scales identifies the nature, functions, applications, and some possible limitations of theories and models, with some evidence identifies evidence, and asserts conclusions with little or no reference to models and/or theories
Contexts	<ul style="list-style-type: none"> critically analyses epistemology, role of peer review, collaboration and technology in developing knowledge critically analyses the influence of social, economic, ethical and cultural factors on Science 	<ul style="list-style-type: none"> analyses epistemology, role of peer review and technology in developing knowledge analyses the influence of social, economic, ethical and cultural factors on Science 	<ul style="list-style-type: none"> explain epistemology, role of peer review and technology in developing knowledge explains the influence of social, economic, ethical and cultural factors on Science 	<ul style="list-style-type: none"> describes the role of peer review in developing knowledge describes the influence of social, economic, ethical and cultural factors on Science 	<ul style="list-style-type: none"> identifies that scientific knowledge has changed over time identifies the influence of social, economic, ethical and cultural factors on Science
Inquiry Skills	<ul style="list-style-type: none"> designs, conducts and improves safe, ethical and original inquiries individually and collaboratively, that collect valid, reliable data in response to a complex question analyses causal and correlational relationships, anomalies, reliability and validity of data and representations, and analyses errors analyses processes and claims, and provides a critique based on evidence, and critically analyses alternatives reflects on own thinking and evaluates planning, time management, use of appropriate work strategies communicates concisely, effectively and accurately, demonstrating scientific literacy in a range of modes, styles, representations, and genres for specific audiences and purposes, with appropriate evidence and accurate referencing 	<ul style="list-style-type: none"> designs, conducts and improves safe, ethical inquiries individually and collaboratively, that collect valid, reliable data in response to a question analyses causal and correlational relationships, anomalies, reliability and validity of data and representations, and discusses errors assesses processes and claims, and provides a critique with reference to evidence, and analyses alternatives reflects on their own thinking and analyses planning, time management, use of appropriate work strategies communicates clearly and accurately, demonstrating scientific literacy in a range of modes, styles, representations and genres for specific audiences and purposes, with appropriate evidence and accurate referencing 	<ul style="list-style-type: none"> plans and conducts safe, ethical inquiries individually and collaboratively, that collect valid data in response to a familiar question explains causal and correlational relationships, anomalies, reliability and validity of data and representations, and cites common errors explains processes and claims, and identifies alternatives with reference to reliable evidence reflects on their own thinking and explains planning, time management, use of appropriate work strategies communicates accurately demonstrating scientific literacy, in a range of modes, styles, representations, and genres for specific purposes, with appropriate evidence and mostly consistent referencing 	<ul style="list-style-type: none"> follows a procedure to conduct safe, ethical inquiries individually and collaboratively, to collect data in response to a simple question with varying success describes trends, relationships and anomalies in data, identifies anomalies, and some possible sources of error describes processes and claims, and identifies the need for improvements with some reference to evidence reflects on their own thinking, with reference to planning and the use of appropriate work strategies communicates demonstrating some scientific literacy, in a range of modes, representations, and genres with some evidence and inconsistent referencing 	<ul style="list-style-type: none"> follows a procedure to conduct safe, ethical inquiries individually and collaboratively, to collect data with little or no connection to a question identifies trends and relationships in data, with little or no reference to sources of error identifies processes and the need for some improvements, with little or no reference to evidence reflects on their own thinking with little or no reference to planning, time management, and use of work strategies communicates demonstrating limited scientific literacy, in a range of modes and representations, with inconsistent and inaccurate referencing