

Erindale College

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

Unit Goals

- describe examples of scientific knowledge relevant to the aviation industry
- apply knowledge and understanding of aviation law and procedures to solve basic practical and theoretical problems of aircraft operation
- describe the relationship between specific documents such as AIP and ERSA
- demonstrate a basic understanding of flight planning requirements and official documents such as Flight Notifications and SAR times

Content Description

Science Inquiry Skills

- research questions for investigation concerning the design and structure of aircraft; propose hypotheses; and predict possible outcomes arising from various designs
- represent data in meaningful and useful ways, including using appropriate SI units and symbols of data, to solve problems and make predictions concerning aircraft performance
- interpret and compare a range of aviation and media texts and identify important information by considering the quality of available evidence
- use appropriate mathematical models, including graphs and tables of data, to solve problems and make predictions concerning aircraft performance

Science as a Human Endeavour

- describe the importance of aviation law to aircraft operations and safety
- understand the role of Air Traffic Control and CENSAR in the maintenance of safety
- discuss ethical, legal and environmental issues related to the safe use of aircraft
- recognise that social, economic, cultural and ethical considerations influence the adoption of new technology
- research and communicate ideas and information regarding commercial aviation and related topics using appropriate scientific terminology
- demonstrate an understanding of the practical and theoretical problems faced by commercial pilots using scientific methods to solve basic fuel and time problems associated with flying

Science Understanding

- describe the differences between licence types and the requirements for IFR flight
- discuss the differences between MACH number and other measures of speed
- describe the effect of bow waves in supersonic flight and how the sonic boom is generated
- recognise and describe the differences between loading charts for small aircraft and those for larger commercial aircraft and helicopters
- calculate climb, cruise and descent performance for specific aircraft
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demonstrate Equi-Time Points and Point of No Return (ETP's and PNR's) and their importance for safety

- describe the special design features of multi engine aircraft and their safety advantages and limitations
- find examples of Australian air law and operational requirements using appropriate documents
- recognise the importance of effective decision-making steps in workload management
- identify different helicopter structures and planforms and describe their uses
- describe the use of controls such as the cyclic, the collective, the anti-torque pedals, and the throttle
- describe the gyroscopic effects on rotary-wing craft, including precession and auto rotation
- demonstrate an understanding of lift and drag for rotor blades and compare to wings
- explore the ways in which hovering and forward flight are achieved by various types of rotary-wing aircraft
- investigate operational reasons such as 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.

Achievement Standards for FLIGHT A - 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"> analyses the fundamental properties and functions of system components, processes and interactions, and how they are affected by factors across a range of temporal and spatial scales analyses the nature, functions, limitations and applications of theories and models using evidence, in unfamiliar contexts assesses processes and claims, provides a critique based on evidence, and discusses alternatives 	<ul style="list-style-type: none"> explains the fundamental properties and functions of system components, processes and interactions, and how they are affected by factors across a range of temporal and spatial scales explains the nature, functions, limitations and applications of theories and models using evidence, in familiar contexts explains processes and claims, provides a critique with reference to evidence, and identifies alternatives 	<ul style="list-style-type: none"> describes the fundamental properties and functions of system components, processes and interactions, and how they are affected by factors across a range of temporal and spatial scales describes the nature, functions, limitations and applications of theories and models with supporting evidence describes processes and claims, and identifies alternatives with some reference to evidence 	<ul style="list-style-type: none"> identifies the fundamental properties and functions with some identification of system components and factors that affect processes across a range of temporal and spatial scales identifies the nature, functions, applications, and some possible limitations of theories and models, with some evidence identifies processes and claims, and identifies the need for improvements with some reference to evidence 	<ul style="list-style-type: none"> identifies the fundamental properties and functions with little or no identification of system components, processes, interactions and contextual scales identifies the nature, function of theories and models, with an assertion of a few possible limitations identifies processes and the need for some improvements, with little or no reference to evidence
Contexts	<ul style="list-style-type: none"> analyses how the practice and applications of science meet needs, make decisions; and is influenced by social, economic, technological, and ethical factors 	<ul style="list-style-type: none"> explains how the practice and applications of science meet needs, make decisions, and is influenced by social, economic, technological, and ethical factors 	<ul style="list-style-type: none"> describes how the applications of science meet needs, make decisions, and is influenced by social, economic, technological, and ethical factors 	<ul style="list-style-type: none"> identifies ways in the applications of science meet needs, and is influenced by some factors 	<ul style="list-style-type: none"> identifies ways in which the application of science has been used in society to meet needs
Inquiry Skills	<ul style="list-style-type: none"> designs, conducts and improves safe, ethical and original inquiries individually and collaboratively, that efficiently collect valid and reliable data in response to a complex question analyses causal and correlational relationships, anomalies, reliability and validity of data and representations, and analyses errors reflects with insight on their own thinking and that of others and evaluates planning, time management, use of appropriate strategies to work independently and collaboratively 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 data in response to a complex question explains causal and correlational relationships, anomalies, reliability and validity of data and representations, and explains errors reflects on their own thinking and analyses planning, time management, use of appropriate strategies to work independently and collaboratively 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 question describes relationships in data sets, reliability and validity of data and representations, and describes common errors reflects on their own thinking and explains planning, time management, use of appropriate strategies to work independently and collaboratively 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 question with varying success identifies trends and anomalies in data and representations, with general comments about errors reflects on their own thinking with some reference to planning, time management, use of appropriate strategies to work independently and collaboratively 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 in data and representations, with little or no reference to anomalies and errors reflects on their own thinking with little or no reference to planning, time management, use of appropriate strategies to work independently and collaboratively communicates demonstrating limited scientific literacy, in a range of modes and representations, with inconsistent and inaccurate referencing