

UNIT OUTLINE

Year: 11/12 Accreditation: T A

Timetable Period: Semester 1 2021

Classroom Teacher: Terry Brady

Executive Teacher: Debbie O'Brien

Course Title	Flight	Course Code:	2317
Semester Unit	Unit 3: Meteorology and Human Factors	Unit Value/Code:	1.0/22662
Term Unit (a)	Unit 3a Meteorology and Human Factors	Unit Value/Code:	0.5/22663
Term Unit (b)	Unit 3b Meteorology and Human Factors	Unit Value/Code:	0.5/22665

Unit Description

In this unit students will study meteorology and its application to aviation and the limitations of aircraft operation and design based on human physiological limitations. Students use mathematics in quantitative and qualitative descriptions. Students develop science inquiry skills and learn about science as a human endeavour.

Specific Unit Goals

By the end of this unit, students:

- demonstrate depth and breadth of scientific knowledge of the physical processes underlying meteorology
- critically research, analyse, evaluate and synthesise meteorological data from a variety of sources
- develop hypotheses and design models and simulations to investigate the relationship between physical variables in meteorology
- demonstrate depth of understanding of human physiology as it applies to aviation, especially the eyes, ears, vestibular apparatus, lungs and circulation
- research and discuss the effects of drugs and medications on aircrew

Content Description

- identify, research and construct questions that explain weather systems and their effects on safe flight
- evaluate the safe use of different types of aviation weather report and equipment for communicating weather conditions across Australia
- 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

- predict the safety implications of meteorological information obtained through various sources
- analyse and describe the work of researchers and meteorologists in the development and application of weather forecasting systems and technologies
- critique the ethical, legal and environmental issues that influence the safe use of aircraft
- identify the structure of the atmosphere and the effect on the temperature gradient
- explain the effect of the Earth’s radiation budget and atmospheric temperature on weather
- apply Boyle’s Law to the relationship between density, temperature and pressure for an ideal gas
- recognise and describe the inverse relationship between humidity and temperature
- define dew point and its relevance to condensation and fog
- define specific and latent heat and their roles in atmospheric energy transfer
- plot information about frontal systems and synoptic charts to predict wind direction, cloud types and weather conditions
- interpret meteorological forecasts and reports, synoptic charts and aerological diagrams
- identify Australian weather services for flight planning
- understand and illustrate the anatomy and function of the circulatory and respiratory systems, the ear and the eye
- discuss the limits of vision and vision illusions and provide specific examples relevant to aviation
- evaluate the role of stress, arousal and fatigue in flight safety
- identify factors in effective decision-making and cockpit workload management

Cost of Materials: Nil

ASSESSMENT

TASK	DUE DATE	WEIGHTING
Test 1	Exam Week term 1	30 %
Assignment	Proposal - week 7 Introduction - week 8 Lesson Plans - week 13 Lessons - tba Reflection - week 16	} 40 %
Test 2	Exam Week term 2	30 %

SPECIFIC ENTRY & EXIT REQUIREMENTS FOR TERM UNITS:

This is a Semester Unit, students wishing to enter or exit after the end of term must have the change approved by the Academy Executive Leader and need to complete 50% of the assessment

Attendance and Participation

It is expected that students will attend and participate in all scheduled classes/contact time/structured learning activities for the units in which they are enrolled, unless there is due cause and adequate documentary evidence is provided. Any student whose attendance falls below 90% of the scheduled classes/contact time or 90% participation in structured learning activities in a unit, without having due cause with adequate documentary evidence will be deemed to have voided the unit. However, the principal has the right to exercise discretion in special circumstances if satisfactory documentation is supplied.

Completion of Assessment Items

Students are expected to substantially complete and submit all assessment items. Exemption from an item and/or alternative assessment without penalty is available to students providing adequate documentary evidence. In order to meet the minimum assessment requirements of a unit, a student must substantially complete and submit at least 70% of the total assessment. However, the principal has the right to exercise discretion in the award of a grade or score in special circumstances where satisfactory documentation is supplied.

Late Submission of Assessment Items

Students are encouraged to submit work on time as this is a valuable organisational skill. Students are also encouraged to complete work even if it is late as there are educational benefits in so doing. The following policy is to ensure equity for all students:

- All assessment tasks are expected to be submitted by the specified due date
- Where marks are awarded for assessment tasks, a late penalty will apply unless an extension is granted. The penalty for late submission is 5% of possible marks per calendar day late, including weekends and public holidays, until a notional zero is reached. If an item is more than 7 days late, it receives the notional zero. Submission on weekends or public holidays is not acceptable. Calculation of a notional zero is based on items submitted on time or with an approved extension (Refer to Notional Zeros)
- Where marks are not awarded, and a grade only is given for an assessment task, teachers will take into account the extent to which students have demonstrated their ability to complete and submit the task by the due date (taking into account any extensions granted) in awarding the grade
- Unless there are exceptional circumstances, students must apply for an extension to the specified due date in advance, providing due cause and adequate documentary evidence for late submission
- It may not be possible to grade or score work submitted late after marked work in a unit has been returned to other students
- The principal has the right to exercise discretion in the application of the late penalty in special circumstances where satisfactory documentation has been provided.

Notional Zeros

Where students fail to hand in assessment items for which marks are awarded, they will be awarded a notional zero for that assessment item. The notional zero will be a score, which lies between 0.1 of a standard deviation below the lowest genuine score for that item and zero. Note: if the lowest genuine score is zero, the notional zero is zero.

Cheating and Dishonest Practice

The integrity of the College's assessment system relies upon all involved acting in accordance with the highest standards of honesty and fairness. Plagiarism is the copying, paraphrasing or summarising of work, in any form, without acknowledgement of sources, and presenting this as a student's own work. Examples of plagiarism could include, but are not limited to:

- submitting all or part of another person's work with/without that person's knowledge
- submitting all or part of a paper from a source text without proper acknowledgement
- copying part of another person's work from a source text, supplying proper documentation, but leaving out quotation marks
- submitting materials which paraphrase or summarise another person's work or ideas without appropriate documentation
- submitting a digital image, sound, design, photograph or animation, altered or unaltered, without proper acknowledgement of the source.

Right to Appeal

The ACT system operates a hierarchy of reviews and appeals:

- Student seeks review from teacher regarding assessment task mark/grade, unit score, unit grade, course score
- Student seeks review from head of department, if required following review by teacher
- Student appeals to her/his college principal for a review of college assessment relating to assessment task grade/mark, unit grade, unit score, course score, penalty imposed for breach of discipline in relation to assessment
- Student, who has been through the college appeal process, may appeal to the Board against the college procedures by which the appeal decision was reached.

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FURTHER INFORMATION ON RELEVANT BSSS POLICIES CAN BE FOUND HERE:

<http://www.bsss.act.edu.au/The Board/policy and procedures manual>

