

AVAT12009 Commercial Pilot Licence Navigation

Term 1 - 2026

Profile information current as at 21/04/2026 08:53 pm

All details in this unit profile for AVAT12009 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

General Information

Overview

This unit will provide you with knowledge of navigational procedures applicable to light commercial aircraft operations. You will learn the aeronautical knowledge requirements of the Civil Aviation Safety Authority Commercial Pilot Licence Navigation Syllabus. You will learn the form of the Earth including latitude and longitude, magnetic and true poles, and directions. By reference to an aeronautical chart and the various chart projections, you will learn how to navigate an airplane. You will learn to convert between Coordinated Universal Time (UTC) and local mean and standard times. You will also be able to use a navigation computer to convert between various airspeeds and ground speeds and perform critical point calculations. Students who have completed the corresponding external CASA exam and want to be exempt from Assessment 1 (Quizzes) should contact the Unit Coordinator.

Details

Career Level: *Undergraduate*

Unit Level: *Level 2*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

Pre-requisites or Co-requisites

Students must meet all requisites: 1. AVAT11002 Basic Aeronautical Knowledge OR (AVAT11012 Aviation Practice AND AVAT11013 Introduction to Aviation); AND 2. AVAT11005 Flight Fundamentals; AND 3. AVAT11010 Aviation Safety Fundamentals OR AVAT11007 Flight Planning, Performance and Operation.

Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the [Assessment Policy and Procedure \(Higher Education Coursework\)](#).

Offerings For Term 1 - 2026

- Cairns
- Online

Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Website

[This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.](#)

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

Regional Campuses

Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses

Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. Online Test

Weighting: 40%

2. Examination

Weighting: 60%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the [University's Grades and Results Policy](#) for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the [CQUniversity Policy site](#).

You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the [CQUniversity Policy site](#).

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from SUTE

Feedback

Break down large navigation problems step by step with each step objective labelled.

Recommendation

Detailed procedural methods should be demonstrated for solving complex navigational problems.

Feedback from SUTE

Feedback

Assessment feedback was insufficient.

Recommendation

Update the assessment rubric and feedback format to make it easier to provide detailed feedback.

Unit Learning Outcomes

On successful completion of this unit, you will be able to:

1. Demonstrate competencies on the Navigation components of CPL (Commercial Pilot License); as detailed in Schedule 3 of Part 61, MOS (Manual of Standards) of CASR (Civil Aviation Safety Regulations)
2. Plan and plot a three-leg navigation exercise on a World Aeronautical Chart and provide the flight plan details including various airspeeds and ground speeds for the exercise to be completed in flight
3. Describe the various global navigation chart projections and their use on national flights
4. Convert time zones to Coordinated Universal Time (UTC), Local Mean Time (LMT), and Local Sidereal Time (LST)
5. Explain the operation and limitations of radio navigation aids
6. Discuss the altimetry procedures used on national flights
7. Calculate critical points for normal and asymmetric operations.

N/A

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level ● Introductory Level ● Intermediate Level ● Graduate Level ● Professional Level ● Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes						
	1	2	3	4	5	6	7
1 - Online Test - 40%	●		●	●		●	●
2 - Examination - 60%	●	●	●		●	●	●

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes						
	1	2	3	4	5	6	7
1 - Communication	●	●	●	●	●	●	●
2 - Problem Solving	●	●		●		●	●
3 - Critical Thinking	●	●	●	●	●	●	●
4 - Information Literacy	●	●	●				
5 - Team Work							
6 - Information Technology Competence		●			●		●
7 - Cross Cultural Competence							
8 - Ethical practice							
9 - Social Innovation	●						
10 - First Nations Knowledges							
11 - Aboriginal and Torres Strait Islander Cultures							

Textbooks and Resources

Textbooks

AVAT12009

Prescribed

Navigation for the Private & Commercial Pilot Licences

Edition: Reprinted 2016 (2016)

Authors: Robson D.

Aviation Theory Centre Pty Ltd

Brisbane , Qld , Australia

ISBN: 978-875537-85-3

Binding: Other

[View textbooks at the CQUniversity Bookshop](#)

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)

Referencing Style

No referencing style set.

Teaching Contacts

Aruna Ranganathan Unit Coordinator

a.ranganathan@cqu.edu.au

Schedule

Week 1 - 09 Mar 2026		
Module/Topic	Chapter	Events and Submissions/Topic
Fundamentals of Air Navigation	1. Fundamentals of Air Navigation	
Week 2 - 16 Mar 2026		
Module/Topic	Chapter	Events and Submissions/Topic
Time	2. Time	Quiz 1
Week 3 - 23 Mar 2026		
Module/Topic	Chapter	Events and Submissions/Topic
Charts	3. Charts & Publications	
Week 4 - 30 Mar 2026		
Module/Topic	Chapter	Events and Submissions/Topic
Publications	3. Charts & Publications	Quiz 2
Week 5 - 06 Apr 2026		
Module/Topic	Chapter	Events and Submissions/Topic
Navigation Computations - Part 1	4. Computations	
Week 6 - 13 Apr 2026		
Module/Topic	Chapter	Events and Submissions/Topic
Navigation Computations - Part 2	4. Computations	Quiz 3
Vacation Week - 20 Apr 2026		
Module/Topic	Chapter	Events and Submissions/Topic
Week 7 - 27 Apr 2026		
Module/Topic	Chapter	Events and Submissions/Topic
Visual Navigation	5. Visual Navigation Procedures	
Week 8 - 04 May 2026		
Module/Topic	Chapter	Events and Submissions/Topic
NDB	6. NDB and ADF	Quiz 4
Week 9 - 11 May 2026		
Module/Topic	Chapter	Events and Submissions/Topic
ADF	6. NDB and ADF	
Week 10 - 18 May 2026		
Module/Topic	Chapter	Events and Submissions/Topic
VOR and DME	7. VOR 8. DME	
Week 11 - 25 May 2026		
Module/Topic	Chapter	Events and Submissions/Topic
GNSS	9. GPS Navigation	
Week 12 - 01 Jun 2026		
Module/Topic	Chapter	Events and Submissions/Topic
Revision	Revision (all Chapters)	
Exam Week - 08 Jun 2026		
Module/Topic	Chapter	Events and Submissions/Topic
Vacation/Exam Week - 15 Jun 2026		
Module/Topic	Chapter	Events and Submissions/Topic

Assessment Tasks

1 Quiz: Four Quizzes

Assessment Type

Online Test

Task Description

1. Four quizzes (fortnightly) will be conducted, each worth 10 marks (weightage 10%). Each quiz consists of multiple-choice and short-calculation questions.
 2. Schedule of the Quizzes: Quiz 1 (in Week 2); Quiz 2 (in Week 4); Quiz 3 (in Week 6); and Quiz 4 (in Week 8).
 3. The syllabus will cover the concepts that are taught during the lectures of the preceding two weeks. Reviewing the lecture recordings before attempting the quiz is strongly recommended.
 4. The duration of the test is one hour. If you experience issues with the online quizzes, notify the unit coordinator as soon as possible (through email a.ranganathan@cqu.edu.au).
 5. The details of the dates and timings of the fortnightly quizzes will be promulgated in Moodle in Week 1 (after the first lecture).
 6. Please ensure your availability for these four quizzes. Only one attempt is allowed. Absentees will not be given another chance.
 7. Total marks: 40 (10 for each quiz); Weightage 40% for overall grade.
 8. Return of Results/Feedback. The debrief for every quiz will be completed during the following week of that specific quiz. For example, the debrief of Quiz 1 will be completed during the Week 3 lectures and tutorial.
- NOTE: This assessment is exempted from the 72-hour submission grace period and must be completed by the stated submission date/time.
- NOTE: AI ASSESSMENT SCALE - NO AI. You must not use AI at any point during the assessment. You must demonstrate your core skills and knowledge.

Assessment Due Date

Return Date to Students

Weighting

40%

Assessment Criteria

The Learning Outcome Assessed: Demonstrate competencies on the Navigation components of CPL (Commercial Pilot License); as detailed in Schedule 3 of Part 61, MOS (Manual of Standards) of CASR (Civil Aviation Safety Regulations). The Quizzes will be MCQ type for assessment of the understanding of the concepts and applications of navigational procedures taught during the lectures.

Correct numerical answer or selection of the best answer among the available multiple-choice options.

Submission

Online

Submission Instructions

Fortnightly quizzes will be available in the Moodle.

Learning Outcomes Assessed

- Demonstrate competencies on the Navigation components of CPL (Commercial Pilot License); as detailed in Schedule 3 of Part 61, MOS (Manual of Standards) of CASR (Civil Aviation Safety Regulations)
- Describe the various global navigation chart projections and their use on national flights
- Convert time zones to Coordinated Universal Time (UTC), Local Mean Time (LMT), and Local Sidereal Time (LST)
- Discuss the altimetry procedures used on national flights
- Calculate critical points for normal and asymmetric operations.

Examination

Outline

Complete an invigilated examination.

Date

During the examination period at a CQUniversity examination centre.

Weighting

60%

Length

150 minutes

Minimum mark or grade

50%

Exam Conditions

Restricted.

Materials

Dictionary - non-electronic, concise, direct translation only (dictionary must not contain any notes or comments).

Calculator - non-programmable, no text retrieval, silent only

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the [Student Academic Integrity Policy and Procedure](#). This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?

A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?

A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?

For academic advice and guidance, the [Academic Learning Centre \(ALC\)](#) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?



Be Honest

If your assessment task is done by someone else, it would be dishonest of you to claim it as your own



Seek Help

If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)



Produce Original Work

Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem