



# AVAT12009 Commercial Pilot Licence Navigation

## Term 1 - 2024

Profile information current as at 16/07/2025 05:07 am

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.

### 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 - 2024

- 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: 30%

#### 2. **Written Assessment**

Weighting: 10%

#### 3. **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
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### Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes						
	1	2	3	4	5	6	7
1 - Online Test - 30%	•		•	•	•	•	•
2 - Written Assessment - 10%	•	•					
3 - 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 - Aboriginal and Torres Strait Islander Cultures							

## Textbooks and Resources

### Textbooks

AVAT12009

#### Supplementary

#### 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

### IT Resources

**You will need access to the following IT resources:**

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

## Referencing Style

All submissions for this unit must use the referencing style: [Harvard \(author-date\)](#)  
For further information, see the Assessment Tasks.

## Teaching Contacts

**Aruna Ranganathan** Unit Coordinator  
[a.ranganathan@cqu.edu.au](mailto:a.ranganathan@cqu.edu.au)

## Schedule

### Week 1 - 04 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Fundamentals of Air Navigation	Fundamentals of Air Navigation	

### Week 2 - 11 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Time	Time	

### Week 3 - 18 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Charts	Charts	

### Week 4 - 25 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Publications	Publications	

### Week 5 - 01 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
Navigation Computations	Navigation Computations	

### Vacation Week - 08 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
<b>Week 6 - 15 Apr 2024</b>		
Module/Topic	Chapter	Events and Submissions/Topic
		Mid-Term Test (30%)
Computations Continued	Computations	<b>MID TERM TEST</b> Due: Week 6 Thursday (18 Apr 2024) 10:00 am AEST
<b>Week 7 - 22 Apr 2024</b>		
Module/Topic	Chapter	Events and Submissions/Topic
Visual Navigation	Visual Navigation	<b>Written Assessment</b> Due: Week 7 Monday (22 Apr 2024) 11:00 pm AEST
<b>Week 8 - 29 Apr 2024</b>		
Module/Topic	Chapter	Events and Submissions/Topic
NDB	NDB and ADF	Written Assessment (10%)
<b>Week 9 - 06 May 2024</b>		
Module/Topic	Chapter	Events and Submissions/Topic
ADF	NDB/ADF	
<b>Week 10 - 13 May 2024</b>		
Module/Topic	Chapter	Events and Submissions/Topic
VOR,DME	VOR, DME	
<b>Week 11 - 20 May 2024</b>		
Module/Topic	Chapter	Events and Submissions/Topic
ETP,PNR	ETP,PNR	
<b>Week 12 - 27 May 2024</b>		
Module/Topic	Chapter	Events and Submissions/Topic
GNSS Revision	GNSS	
<b>Review/Exam Week - 03 Jun 2024</b>		
Module/Topic	Chapter	Events and Submissions/Topic
<b>Exam Week - 10 Jun 2024</b>		
Module/Topic	Chapter	Events and Submissions/Topic

## Assessment Tasks

### 1 MID TERM TEST

#### Assessment Type

Online Test

#### Task Description

Mid-Term Test will be conducted in week 6 [on 18 April (after vacation week)]. The syllabus will cover on the concepts that are taught during the lectures taught up to and inclusive of week 5. The duration of the test is 1.5 hrs. The test will be available online (in Moodle) for the students for a fixed duration of 1.5 hrs (from 1000 to 1130 (AEST) on 18 April (during Lecture/Tutorials timeslot). There is no alternative time-slot available (for the Test), on the day of the TEST. The details of the Mid-Term Test will be promulgated in Moodle in second/third week. Please ensure your availability for this Mid-Term Test commencing at 1000 (AEST) on 18 April 2024. Only one attempt is allowed. Absentees will not be given another chance. The University regulations will decide the outcome for possible consideration of a RE-TEST. This Mid-

Term Test is worth 30%. Knowing the schedule of Mid-Term test before commencement of the term gives adequate notice for all the students to plan/modify their work-schedules or other commitments and ensure their presence for the exam.

**Assessment Due Date**

Week 6 Thursday (18 Apr 2024) 10:00 am AEST

Online Test in Moodle: 1.5 hrs (commencing at 1000 (AEST) and finishing at 1130 (AEST) on 18 April 2024.

**Return Date to Students**

Week 7 Friday (26 Apr 2024)

30%

**Weighting**

30%

**Assessment Criteria**

MCQ type Test. Assessment of the understanding of the concepts of CPL Navigation as covered in weeks 1 to 5. Each MCQ question has a mark allotted; and the total marks are 30.

**Referencing Style**

- [Harvard \(author-date\)](#)

**Submission**

Online

**Submission Instructions**

Online TEST through 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)
- Explain the operation and limitations of radio navigation aids
- Discuss the altimetry procedures used on national flights
- Calculate critical points for normal and asymmetric operations.

## 2 Written Assessment

**Assessment Type**

Written Assessment

**Task Description**

This assessment is designed to strengthen your understanding of flight planning and navigation in VFR conditions. In order to achieve this, you will need to:

- Use map along with computations learned throughout this course to plan a flight for weather forecast to given points and back to the starting point.
- Proficiency when using the CR3 computer.
- Integrate weather restrictions as well as environmental conditions into the flight plan.
- Prepare the map with weather requirements and limitations.
- Demonstrate awareness of hazards

**Assessment Due Date**

Week 7 Monday (22 Apr 2024) 11:00 pm AEST

Online Submission

**Return Date to Students**

Week 8 Friday (3 May 2024)

Debrief-Individual

**Weighting**

10%

**Assessment Criteria**

Successfully plan a VFR flight according to requirements (Details of the Assignment and the Marking Rubric are available in Moodle). Using information given, you will plan a VFR flight from point A to B to C and back to point A. This exercise will give you practice in flight planning navigation using the flight computer and maps. You will be assessed for 10% towards overall weightage. The main purpose of this assessment is to assess your ability to complete a Navigation Exercise under VFR conditions.

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**Referencing Style**

- [Harvard \(author-date\)](#)

**Submission**

Online

**Submission Instructions**

Individual submissions only.

**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)
- 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

## 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