



AVAT12009 Navigation (Commercial Pilot Licence)

Term 1 - 2022

Profile information current as at 13/12/2025 05:46 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

Navigation (Commercial Pilot Licence) will provide you with knowledge of navigational procedures applicable to light commercial aircraft operations. You will cover the aeronautical knowledge requirements of the Civil Aviation Safety Authority Commercial Pilot Licence Navigation Syllabus. You will study 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 aeroplane. 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 speed 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

Prerequisites: AVAT11002 Basic Aeronautical Knowledge; AVAT11003 Basic Aeronautical Practice; AVAT11005 Aviation Physics; AVAT11006 Aviation Law and AVAT 11007-Flight Planning Performance and Operation-Private Pilot License (PPL).

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 - 2022

- Brisbane
- Bundaberg
- Cairns
- Online
- Perth

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 Student feedback form

Feedback

Lack of adequate information on Moodle site.

Recommendation

Detailed information related to assessment tasks, assessment return and feedback will be included in Moodle.

Feedback from Student feedback form

Feedback

Assessment feedback was insufficient/unclear.

Recommendation

Assessment rubric and feedback format to be updated to make it easier to provide detailed feedback.

Feedback from Student feedback form

Feedback

Assessment was not returned on time.

Recommendation

Change assessment due dates to align better with UC/marker availability.

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



Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes						
	1	2	3	4	5	6	7
1 - Online Test - 30%	•		•	•	•	•	•

Assessment Tasks	Learning Outcomes						
	1	2	3	4	5	6	7
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							

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - Online Test - 30%	•	•	•	•		•				
2 - Written Assessment - 10%	•	•	•	•						
3 - Examination - 60%	•	•	•			•				

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
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Schedule

Week 1 - 07 Mar 2022

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

Week 2 - 14 Mar 2022

Module/Topic	Chapter	Events and Submissions/Topic
Time	Time	

Week 3 - 21 Mar 2022

Module/Topic	Chapter	Events and Submissions/Topic
Charts	Charts	

Week 4 - 28 Mar 2022

Module/Topic	Chapter	Events and Submissions/Topic
Publications	Publications	

Week 5 - 04 Apr 2022

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

Vacation Week - 11 Apr 2022

Module/Topic	Chapter	Events and Submissions/Topic
Week 6 - 18 Apr 2022		
Module/Topic	Chapter	Events and Submissions/Topic
		Mid-Term Test (30%)
Computations Continued	Computations	MID TERM TEST Due: Week 6 Thursday (21 Apr 2022) 11:00 am AEST
Week 7 - 25 Apr 2022		
Module/Topic	Chapter	Events and Submissions/Topic
Visual Navigation	Visual Navigation	
Week 8 - 02 May 2022		
Module/Topic	Chapter	Events and Submissions/Topic
		Written Assessment (10%)
NDB	NDB and ADF	Written Assessment Due: Week 8 Wednesday (4 May 2022) 12:00 pm AEST
Week 9 - 09 May 2022		
Module/Topic	Chapter	Events and Submissions/Topic
ADF	NDB/ADF	
Week 10 - 16 May 2022		
Module/Topic	Chapter	Events and Submissions/Topic
VOR,DME	VOR, DME	
Week 11 - 23 May 2022		
Module/Topic	Chapter	Events and Submissions/Topic
ETP,PNR	ETP,PNR	
Week 12 - 30 May 2022		
Module/Topic	Chapter	Events and Submissions/Topic
GNSS	GNSS	
Review/Exam Week - 06 Jun 2022		
Module/Topic	Chapter	Events and Submissions/Topic
Exam Week - 13 Jun 2022		
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 (after vacation week). The syllabus will cover on the concepts that are taught during the lectures taught upto week 5. The duration of the test is one hour. The test will be available online (in Moodle) for the students for a fixed duration of ONE HOUR; commencing at one specified time only. 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 on the specified date and time-slot. Only one attempt is allowed. Absentees will not be given another chance. The University regulations will strictly apply to the absentees for possible consideration of a RE-TEST. This Mid-Term Test is worth 30%; and the specified date and time will

be promulgated in week two/three. This 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 (21 Apr 2022) 11:00 am AEST

Online Test in Moodle: ONE HOUR SLOT (details will be specified in week two/three)

Return Date to Students

Week 7 Thursday (28 Apr 2022)

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. Rubric will be available in Moodle.

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.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence

2 Written Assessment

Assessment Type

Written Assessment

Task Description

This assessment is designed to strengthen your understanding of flight planning and navigation. 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

Your map and flight plan must be produced in electronic format (either as (a) a single page word-processed document, (b) single page Publisher document saved in a pdf format, or (c) as a single PowerPoint slide saved in a pdf format) and should be submitted through the assessment link in Moodle, by uploading your file following the on-screen instructions. Note; that all submissions are processed through the similarity detection software (called Turnitin), hence the requirement to submit the Publisher or PowerPoint documents as pdf files. You must ensure that all of the work is your own, in line with University requirements.

Learning Outcomes Assessed

- Understand the model of International Standard Atmosphere
- Demonstrate utilisation of atmospheric characteristics and how temperature, pressure and density vary with altitude
- Apply the meteorological conditions to the planned flight.
- Identify features on the WAC map and display awareness of important features.
- Display accuracy in the calculation of the required information at the flight planning stage

Assessment Due Date

Week 8 Wednesday (4 May 2022) 12:00 pm AEST

Online Submission

Return Date to Students

Week 10 Thursday (19 May 2022)

Debrief-Individual

Weighting

10%

Assessment Criteria

Successfully plan a VFR flight according to requirements (See Moodle for details). 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.

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

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy

Examination

Outline

Complete an invigilated examination.

Date

During the examination period at a CQUniversity examination centre.

Weighting

60%

Length

120 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