



# **AVAT13012 *Flight Planning, Performance and Loading (Air Transport Pilot Licence)***

## **Term 2 - 2019**

Profile information current as at 05/05/2024 12:10 am

All details in this unit profile for AVAT13012 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.

### Corrections

#### Unit Profile Correction added on 22-08-19

Exam conditions to be changed from " Open Book" to "Restricted" .

Instructor Authorised/Allowed Material is "Boeing 727 Performance and Operating handbook" 2001 (2001) Authors: Air-Services Australia (CASA); ISBN 0644038136; Binding: Paperback.

## General Information

### Overview

Flight Planning, Performance and Loading (Air Transport Pilot Licence) will provide you with the advanced knowledge required to plan an international Instrument Flight Rules (IFR) flight in a heavy air transport aircraft. You will learn how to interpret large aircraft performance data. From meteorological forecasts, you will determine the appropriate route, altitude and alternate aerodromes. You will learn how to prepare a load and trim sheet for a large transport aircraft.

### Details

Career Level: *Undergraduate*

Unit Level: *Level 3*

Credit Points: *12*

Student Contribution Band: *8*

Fraction of Full-Time Student Load: *0.25*

### Pre-requisites or Co-requisites

Prerequisites: AVAT12012 Instrument Flight Rules and Procedures; AVAT12010 Flight Planning, Performance and Loading (Commercial Pilot Licence); AVAT13008 Navigation (Air Transport Pilot Licence); and AVAT13009 Meteorology (Air Transport Pilot Licence).

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 2 - 2019

- Bundaberg
- 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 12-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 25 hours of study per week, making a total of 300 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: 20%

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

Weighting: 20%

#### 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](#).

## Unit Learning Outcomes

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

1. Interpret large aircraft performance data
2. Analyse critically, appropriate route, altitude and aerodromes using forecast meteorological conditions
3. Prepare a load and trim sheet for a large transport aircraft
4. Prepare a large aircraft Instrument Flight Rules (IFR) flight plan, including navigation plan, fuel plan and load sheet
5. Exercise judgement in the flight planning process for large transport aircraft.

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
1 - Online Test - 20%	•		•		
2 - Written Assessment - 20%	•	•		•	•
3 - Examination - 60%		•	•	•	•

### Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
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					

## Graduate Attributes

## Learning Outcomes

1 2 3 4 5

### 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 - 20%

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#### 2 - Written Assessment - 20%

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#### 3 - Examination - 60%

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## Textbooks and Resources

### Textbooks

AVAT13012

#### Prescribed

#### **Aeroplane Performance, Planning & Loading for the Air Transport Pilot**

Edition: 2002 (2002)

Aviation Theory Centre

Australia

ISBN: 187553736-8

Binding: Paperback

AVAT13012

#### Prescribed

#### **Boeing 727 Performance and Operating Handbook**

Edition: 2001 (2001)

Air-Services Australia (CASA)

ISBN: 0644038136

Binding: Paperback

#### **Additional Textbook Information**

1. The book ( Boeing 727 Performance & Operating Handbook) is compulsory for ATPL Exam (Flight Planning) and this Unit Examinations. Questions are, in the main, 'practical' types based on the Boeing 727 aeroplane, and in general will require the use of the Boeing 727 Performance and Operating Handbook (Abbreviated)\*. Questions may be based on any section of the Handbook.

2. The book Aeroplane Performance, Planning & Loading for the Air Transport Pilot by Aviation Theory Centre is the suggested reference book by CASA for ATPL Exams on Flight Planning Performance and Loading.

### 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

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

## Schedule

### Week 1 - 15 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Take-off Performance a. Performance Considerations b. Take-off Runway & Climb Performance c. Obstacle Clearance Requirements d. TOW Limitations	Chapter 1	Lectures/Tutorials

### Week 2 - 22 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Enroute Performance a. Climb Performance b. Cruise Performance Theory c. Cruise Profiles d. Operational Factors	Chapter 2	Lectures/Tutorials

### Week 3 - 29 Jul 2019

Module/Topic	Chapter	Events and Submissions/Topic
Landing Performance a. Climb Limited Landing Weight b. Landing Distance Requirements c. Operational Considerations	Chapter 3	Lectures/Tutorials

### Week 4 - 05 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Fundamentals of Flight Planning - Part 1 a. Vertical considerations b. Airspeed c. Fuel Requirements	Chapter 4	Lectures/Tutorials Revision for Quiz 1

### Week 5 - 12 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
Fundamentals of Flight Planning - Part 2 a. Flight Planning Problems b. Operational Aspects c. Aeronautical Charts for IFR Operations	Chapter 4	Lectures/Tutorials Quiz 1 ( Syllabus: Week 1-4 Lectures and Tutorials); Weightage 20%  <b>Online Quiz 1</b> Due: Week 5 Monday (12 Aug 2019) 12:00 pm AEST

### Vacation Week - 19 Aug 2019

Module/Topic	Chapter	Events and Submissions/Topic
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**Week 6 - 26 Aug 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Flight Planning- Practical Application - B727 - Part 1 a. B-727 Performance and Operating Handbook b. Take-off and Climb	Chapter 5	Lectures/Tutorials

**Week 7 - 02 Sep 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Flight Planning- Practical Application - B727 - Part 2 a. Cruise Performance b. Descent, Holding and Landing Performance	Chapter 5	Lectures/Tutorials

**Week 8 - 09 Sep 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Operational Flight Planning - Part 1 a. CP and PNR b. Pre-Flight Estimates	Chapter 7	Lectures/Tutorials Revision for Quiz 2

**Week 9 - 16 Sep 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Operational Flight Planning - Part 2 a. Flight Plan Preparation b. In-Flight Re-Planning	Chapter 7	Lectures/Tutorials Quiz 2 ( Syllabus: Week 5-8 Lectures and Tutorials) Weightage 20%
		<b>Online Quiz 2</b> Due: Week 9 Monday (16 Sept 2019) 12:00 pm AEST

**Week 10 - 23 Sep 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Aeroplane Loading - Part 1 - B 727 a. Weight Terminology b. Weight and Balance	Chapter 8	Lectures/Tutorials

**Week 11 - 30 Sep 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Aeroplane Loading - Part 2 - B 727 a. Load Control System b. B727 Load and Trim Sheet Calculations	Chapter 8	Lectures/Tutorials

**Week 12 - 07 Oct 2019**

Module/Topic	Chapter	Events and Submissions/Topic
Overall Review ATPL Exam questions review	Final Revision	Lectures/Tutorials

**Review/Exam Week - 14 Oct 2019**

Module/Topic	Chapter	Events and Submissions/Topic

**Exam Week - 21 Oct 2019**

Module/Topic	Chapter	Events and Submissions/Topic

**- 28 Oct 2019**

Module/Topic	Chapter	Events and Submissions/Topic

## Term Specific Information

I am the Unit Coordinator and lecturer for this subject.

During this term please contact me, if and when, you feel it is necessary for you to progress, successfully, in this unit. The following books are essential for all students to understand the lectures and tutorials from week 1 till end of the semester.

1. Aeroplane Performance, Planning & Loading for the Air Transport Pilot 2002 (2002); Authors:Aviation Theory Centre Australia; ISBN 187553736-8

2. Boeing 727 Performance and Operating Handbook 2001 (2001); Authors: Air-Services Australia (CASA); ISBN 0644038136.

Please make sure that you have these books (ready for reference) while attending the classes or viewing the recorded lectures and tutorials.

Aruna Ranganathan

## Assessment Tasks

### 1 Online Quiz 1

#### Assessment Type

Online Test

#### Task Description

This Quiz will cover all the lectures and tutorials (from week 1 to 4) which includes cover the theoretical and application aspects of a large aircraft Performance in Take-off, Enroute and Landing phases.

The Quiz will be available to the students for a time slot of 24 hours; and each student will be given one hour for completion from the time of starting his/her attempt; Only one attempt is permitted.

#### Assessment Due Date

Week 5 Monday (12 Aug 2019) 12:00 pm AEST

Completion of online Quiz 1

#### Return Date to Students

Week 6 Monday (26 Aug 2019)

Grading and discussions on calculations and solutions

#### Weighting

20%

#### Assessment Criteria

Assessment criteria/rubric will be provided to the students during week 2 lecture.

#### Referencing Style

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

#### Submission

Online

#### Submission Instructions

The Quiz will be available to the students for a time slot of 24 hours; and each student will be given one hour for completion from the time of starting his/her attempt; Only one attempt is permitted.

#### Learning Outcomes Assessed

- Interpret large aircraft performance data
- Prepare a load and trim sheet for a large transport aircraft

#### Graduate Attributes

- Problem Solving
- Critical Thinking
- Ethical practice

### 2 Online Quiz 2

#### Assessment Type

Written Assessment



**Task Description**

This Quiz will cover all the lectures and tutorials (from week 5 to 8) which includes the theoretical and application aspects on the fundamentals of Flight Planning with specific reference to B-727 aircraft.

The Quiz will be available to the students for a time slot of 24 hours; and each student will be given one hour for completion from the time of starting his/her attempt; Only one attempt is permitted.

**Assessment Due Date**

Week 9 Monday (16 Sept 2019) 12:00 pm AEST

Completion of online Quiz 2

**Return Date to Students**

Week 10 Monday (23 Sept 2019)

Grading and discussions on calculations and solutions

**Weighting**

20%

**Assessment Criteria**

Assessment criteria/rubric will be provided to the students during week 6 lecture.

**Referencing Style**

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

**Submission**

Online

**Submission Instructions**

The Quiz will be available to the students for a time slot of 24 hours; and each student will be given one hour for completion from the time of starting his/her attempt; Only one attempt is permitted.

**Learning Outcomes Assessed**

- Interpret large aircraft performance data
- Analyse critically, appropriate route, altitude and aerodromes using forecast meteorological conditions
- Prepare a large aircraft Instrument Flight Rules (IFR) flight plan, including navigation plan, fuel plan and load sheet
- Exercise judgement in the flight planning process for large transport aircraft.

**Graduate Attributes**

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence
- Cross Cultural Competence
- Ethical practice

## Examination

**Outline**

Complete an invigilated examination.

**Date**

During the examination period at a CQUniversity examination centre.

**Weighting**

60%

**Length**

180 minutes

**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