

In Progress

Please note that this Unit Profile is still in progress. The content below is subject to change.



ENTA13025 *Sustainable Energy for Aviation*

Term 2 - 2024

Profile information current as at 13/05/2024 10:36 am

All details in this unit profile for ENTA13025 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

Aerospace vehicles are powered using a range of energy sources. The design of current aircraft power plants needs to minimise the impact of air travel on the environment while improving passenger safety, comfort and costs. In this unit, you will learn the fundamentals of various types of combustion engines and the parameters that affect their performance. You will also be introduced to the various forms of renewable energy such as solar, wind and hydrogen, and energy storage systems such as batteries and fuel cells, focusing on their applicability in the aviation context. You will build on your knowledge of propulsion systems and learn about strategies to improve the efficiency of jet engines. This unit will also cover future fuels and energy sources, engine emission standards and improving the sustainability of air travel through harnessing waste energy and minimising engine emissions.

Details

Career Level: *Undergraduate*

Unit Level: *Level 3*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

Pre-requisites or Co-requisites

Prerequisite: Gas Turbine Engines

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 - 2024

- Online
- Rockhampton

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. **Written Assessment**

Weighting: 20%

2. **Written Assessment**

Weighting: 20%

3. **Project (applied)**

Weighting: 30%

4. **Online Test**

Weighting: 30%

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. Analyse the performance of various combustion engines and propulsion systems
2. Evaluate the feasibility of using renewable energy sources such as solar, wind and hydrogen and various energy storage systems for air transportation applications
3. Propose emission reduction strategies that suit a given air transport system in various jurisdictions
4. Document professional documentation of the solutions and analysis process using relevant terminology, diagrams and standard symbols.

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
1 - Written Assessment - 20%	•			
2 - Written Assessment - 20%		•	•	•
3 - Project (applied) - 30%			•	•
4 - Online Test - 30%	•	•		

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes			
	1	2	3	4
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

Information for Textbooks and Resources has not been released yet.

This information will be available on Monday 17 June 2024

Academic Integrity Statement

Information for Academic Integrity Statement has not been released yet.

This unit profile has not yet been finalised.