



GEOG12020 Australian Weather and Climate

Term 2 - 2024

Profile information current as at 26/06/2024 11:37 am

All details in this unit profile for GEOG12020 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

The saying, "climate is what you expect, weather is what you get", sums up why you will study atmospheric processes from two different time perspectives in this unit. You will examine how the atmosphere, the oceans and the land exchange radiation, heat and water to create the physical structure and circulation characteristics of the troposphere. You will explore the forces that create the life-cycle of weather features with particular attention to Australian examples. Your study will examine how these features are depicted in weather maps. The importance of time and spatial scales with respect to weather systems will be emphasised. In recent years, atmospheric research has unmasked a range of longer-term climate features that have a profound influence on Australian weather. You will learn how the fluctuations of these climate structures affect our region. You will gain introductory experience in using weather data from instruments, radar, satellites and weather models. This will lead to an examination of climate data - where to find it and how to use it. You will examine case studies of Aboriginal and Torres Strait Islander peoples' weather knowledge.

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

18 Units of Credit

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

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: 30%

3. **Project (applied)**

Weighting: 50%

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.

Feedback

The learning material content is too large.

Recommendation

The unit learning material will be reviewed to trim the content.

Feedback from Student feedback.

Feedback

The use of Mean Sea-level Pressure charts could be scaffolded better for non-environmental science students.

Recommendation

The unit learning material will be reviewed to provide content suitable for students taking the unit as an elective.

Unit Learning Outcomes

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

1. Explain the role of energy balance and physical forcing in atmospheric structure, circulation and air-mass characteristics
2. Apply synoptic, regional and local scale weather system concepts and data to Australian environment case studies
3. Analyse climate concepts that affect Australian weather and environment
4. Recognise and value Aboriginal and Torres Strait Islander people's weather knowledge.

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
1 - Written Assessment - 20%	•			
2 - Written Assessment - 30%			•	•
3 - Project (applied) - 50%		•		

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				

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - Written Assessment - 20%				•		•				
2 - Written Assessment - 30%	•			•		•	•			
3 - Project (applied) - 50%	•	•	•							

Textbooks and Resources

Textbooks

There are no required textbooks.

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

Michael Hewson Unit Coordinator
m.hewson@cqu.edu.au

Schedule

Week 1 - The Atmosphere and Global Circulation. - 08 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
	There is no prescribed textbook for GEOG12020 - the accompanying Moodle website contains lectures, videos, websites, and other learning material to cover each week's topic.	

Week 2 - Atmospheric Forces - Wind, Clouds and Precipitation. - 15 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
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Week 3 - Australian Indigenous Weather Knowledges. - 22 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
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Week 4 - Australian Air-masses and Weather at Synoptic Scale. - 29 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
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Week 5 - Australian Weather at Mesoscale. - 05 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic
		Portfolio #1 Due: Week 5 Monday (5 Aug 2024) 9:00 am AEST

Vacation Week - 12 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic
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Week 6 - Australian Weather at Local Scale. - 19 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic
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Week 7 - Australian Climate Modes. - 26 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic
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Week 8 - The Evidence Basis of Climate Change. - 02 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
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Week 9 - Weather and Climate Data and Models. - 09 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
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Week 10 - Weather Report 1. - 16 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
		Portfolio #2 Due: Week 10 Monday (16 Sept 2024) 9:00 am AEST

Week 11 - Weather Report 2. - 23 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
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Week 12 - Weather Report 3. - 30 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
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Review/Exam Week - 07 Oct 2024

Module/Topic	Chapter	Events and Submissions/Topic
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Exam Week - 14 Oct 2024

Module/Topic	Chapter	Events and Submissions/Topic
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Weather Observation Report Due:
Exam Week Monday (14 Oct 2024)
9:00 am AEST

Assessment Tasks

1 Portfolio #1

Assessment Type

Written Assessment

Task Description

Portfolio #1 is a consolidated submission of one Microsoft Word file containing written answers to questions from the learning activities of weeks 1, 2 and 3 of GEOG12020 Weather and Climate of Australia. The portfolio is to be submitted as a single MS-Word file by the due date.

The unit Moodle website contains a detailed exercise explanation in the relevant week:

- Week 1 - The Atmosphere and Global Circulation. 6 marks.
- Week 2 - Atmospheric Forces - Wind, Clouds and Precipitation. 7 marks.
- Week 3 - Australian Indigenous Weather Knowledges. 7 marks.

Use of Generative Artificial Intelligence agents (Gen AI)

Within this assessment, the use of Microsoft Copilot, Chat GPT or other Gen AI agents is as follows: Gen AI content can be used to generate ideas only.

Assessment Due Date

Week 5 Monday (5 Aug 2024) 9:00 am AEST

Return Date to Students

By 10 days from submission.

Weighting

20%

Assessment Criteria

The degree to which:

- the submission demonstrates mastery of the unit learning material;
- each written answer or drawn diagram is complete, engaging and insightful;
- answer paragraph/sentence construction presents logical argument progression; and
- the learning material (or external sources) inform an answer.

Referencing Style

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

Submission

Online

Submission Instructions

Submit Portfolio #1 via the GEOG12020 Moodle site Turnitin facility.

Learning Outcomes Assessed

- Explain the role of energy balance and physical forcing in atmospheric structure, circulation and air-mass characteristics

Graduate Attributes

- Information Literacy
- Information Technology Competence

2 Portfolio #2

Assessment Type

Written Assessment

Task Description

Portfolio #2 is a consolidated submission of one Microsoft Word file containing written answers to questions from the learning activities of weeks **4, 5, 6, 7** and **8** of GEOG12020 Weather and Climate of Australia. The portfolio is to be submitted as a single MS-Word file by the due date.

The unit Moodle website contains a detailed exercise explanation in the relevant week:

- Week 4 – Australian Air-masses and Weather at Synoptic Scale. 6 marks.
- Week 5 – Australian Weather at Mesoscale. 6 marks.
- Week 6 – Australian Weather at Local Scale. 6 marks.
- Week 7 – Australian Climate Modes. 6 marks.
- Week 8 – The Evidence Basis of Climate Change. 6 marks.

Use of Generative Artificial Intelligence agents (Gen AI)

Within this assessment, the use of Microsoft Copilot, Chat GPT or other Gen AI agents is as follows: Gen AI content can be used to generate ideas only.

Assessment Due Date

Week 10 Monday (16 Sept 2024) 9:00 am AEST

Return Date to Students

By 10 days from submission.

Weighting

30%

Assessment Criteria

The degree to which:

- the submission demonstrates mastery of the unit learning material;
- each written answer or drawn diagram is complete, engaging and insightful;
- answer paragraph/sentence construction presents logical argument progression; and
- the learning material (or external sources) inform an answer.

Referencing Style

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

Submission

Online

Submission Instructions

Submit Portfolio #2 via the GEOG12020 Moodle site Turnitin facility.

Learning Outcomes Assessed

- Analyse climate concepts that affect Australian weather and environment
- Recognise and value Aboriginal and Torres Strait Islander people's weather knowledge.

Graduate Attributes

- Communication
- Information Literacy
- Information Technology Competence
- Cross Cultural Competence

3 Weather Observation Report

Assessment Type

Project (applied)

Task Description

In Portfolio #1, you chose a Bureau of Meteorology (BoM) weather data site.

Your task in week 10 of the term, for all 5 days, is to collect daily:

- local scale weather data near where you live;
- local and mesoscale weather images;
- synoptic-scale weather images; and
- relevant climate mode (index) figures.

The 3,500 word report completed in weeks 11 and 12, will:

- present graphs of the weather observation data and imagery as figures;
- critically evaluate local, meso and synoptic-scale weather pattern relationships; and
- discuss weather observations within the background of three climate modes.

You will explain the connections between synoptic weather features and local-scale weather measurements informed by the unit learning material. The report will highlight any notable meteorological events that result in severe or unusual weather, such as storms, flooding, damaging winds, or unusually high levels of air pollution. The report will discuss the background of climate modes that were evident at the time.

Good marks will be accrued by those who use a range of relevant data/imagery.

Use of Generative Artificial Intelligence agents (Gen AI):

Within this assessment, the use of Microsoft Copilot, Chat GPT or other Gen AI agents is as follows: Gen AI content can be used to generate ideas only.

WORD COUNT for this Weather Report:

The word count is considered from the first word of the introduction to the last word of the conclusion. It excludes the cover page, abstract, contents page, reference page and appendices. It includes in-text referencing, direct quotations and words contained within tables that are in the body of the assignment.

Assessment Due Date

Exam Week Monday (14 Oct 2024) 9:00 am AEST

Return Date to Students

By 10 days from submission.

Weighting

50%

Assessment Criteria

The degree to which:

- The report is well structured, cites references correctly and engages readers.
- The report presents daily local scale weather data and observations suitably for the observation period.
- The report presents daily synoptic scale weather data suitably for the observation period.
- The report describes the connecting links between synoptic and local scale weather data.
- The report illustrates an understanding of weather processes compared to weeks 1 to 7 learning.

Referencing Style

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

Submission

Online

Submission Instructions

Submit the Weather Observation Report via the GEOG12020 Moodle site Turnitin facility.

Learning Outcomes Assessed

- Apply synoptic, regional and local scale weather system concepts and data to Australian environment case studies

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking

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