



UNSW Course Outline

CLIM2001 Fundamentals of Atmospheric Science - 2024

Published on the 08 Feb 2024

General Course Information

Course Code : CLIM2001

Year : 2024

Term : Term 1

Teaching Period : T1

Is a multi-term course? : No

Faculty : Faculty of Science

Academic Unit : School of Biological, Earth and Environmental Sciences

Delivery Mode : In Person

Delivery Format : Standard

Delivery Location : Kensington

Campus : Sydney

Study Level : Undergraduate

Units of Credit : 6

Useful Links

[Handbook Class Timetable](#)

Course Details & Outcomes

Course Description

This course covers the basic physical principles and processes which govern our atmosphere and its climate. First of all, this course provides an introduction and overview of our atmosphere, the main physical principles that govern its behaviour, and how to apply them to important

questions about weather and climate. This shows students an important application of basic physics (and a bit of chemistry), and for Oceanography, Meteorology and Climate students this will provide a necessary foundation upon which later courses will build. For instance, you will learn about the ozone hole, the greenhouse effect, how to use charts to determine the likelihood of storms developing, why deserts occur at certain latitudes, and how to use the Bureau of Meteorology's radar images on its website to track thunderstorms. This course will also train students in how to apply basic principles of physics and mathematics (including calculus) to real-world problems and situations. This skill will add value to the work you have already invested in learning those principles and will be relevant no matter what later path in life you take.

Course Aims

This course has two aims. One is to provide an introduction and overview of our atmosphere, the main physical principles that govern its behaviour, and how to apply them to important questions about weather and climate. The other aim of the course, at least as important as the first, is to train students in how to apply basic principles of physics and mathematics (including calculus) to real-world problems and situations.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Describe the main processes that govern atmospheric processes and patterns
CLO2 : Understand and explain some weather and climatic phenomena
CLO3 : Understand global climate and how it has changed over time
CLO4 : Use physical and mathematical concepts as tools to explain atmospheric phenomena, such as the rotation around high and low pressure systems, the existence of jet streams, the formation of convective storms, or the greenhouse effect.

Course Learning Outcomes	Assessment Item
CLO1 : Describe the main processes that govern atmospheric processes and patterns	<ul style="list-style-type: none">• Continuous Quizzes• Final Exam• Mid-Term Assessment
CLO2 : Understand and explain some weather and climatic phenomena	<ul style="list-style-type: none">• Continuous Quizzes• Final Exam• Mid-Term Assessment
CLO3 : Understand global climate and how it has changed over time	<ul style="list-style-type: none">• Final Exam• Mid-Term Assessment
CLO4 : Use physical and mathematical concepts as tools to explain atmospheric phenomena, such as the rotation around high and low pressure systems, the existence of jet streams, the formation of convective storms, or the greenhouse effect.	<ul style="list-style-type: none">• Final Exam• Mid-Term Assessment

Learning and Teaching Technologies

Moodle - Learning Management System

Learning and Teaching in this course

All students are encouraged to attend lectures and labs but all lectures are recorded. Active participation via discussions and questions are also strongly encouraged.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Continuous Quizzes Assessment Format: Individual	10%	
Final Exam Assessment Format: Individual	60%	
Mid-Term Assessment Assessment Format: Individual	30%	

Assessment Details

Continuous Quizzes

Assessment Overview

You will be expected to solve one short online quiz per lecture. These quizzes will allow you to test your understanding of the course material, and point to the 2-3 most important take-home messages from each lecture.

The final mark for this assessment will be computed via a simple average over all quizzes.

Course Learning Outcomes

- CLO1 : Describe the main processes that govern atmospheric processes and patterns
- CLO2 : Understand and explain some weather and climatic phenomena

Final Exam

Assessment Overview

The final exam will follow the same structure as the mid-term; it will be a 15-minute oral examination with two examiners.

You will receive several short questions 15 minutes before the actual exam, and can select two to be answered. All course material can be used during preparation.

Questions will be rather general and allow for broader discussions around the course material, with a focus on physical understanding of the phenomena discussed in the course.

The exam will take place during the exam period and feedback will be provided via moodle.

Course Learning Outcomes

- CLO1 : Describe the main processes that govern atmospheric processes and patterns
- CLO2 : Understand and explain some weather and climatic phenomena
- CLO3 : Understand global climate and how it has changed over time
- CLO4 : Use physical and mathematical concepts as tools to explain atmospheric phenomena, such as the rotation around high and low pressure systems, the existence of jet streams, the formation of convective storms, or the greenhouse effect.

Mid-Term Assessment

Assessment Overview

This test assesses your understanding of course material from the first half of the term.

This mid-term will be delivered orally, either via MS Teams/Zoom videocall or in person. There will be one student and two examiners present. The questions will focus on conceptual understanding of the course material rather than solving specific numerical problems.

The exam will take 15 minutes for each student.

The mid-term will take place after Flexibility Week, and feedback will be provided via moodle.

Course Learning Outcomes

- CLO1 : Describe the main processes that govern atmospheric processes and patterns
- CLO2 : Understand and explain some weather and climatic phenomena
- CLO3 : Understand global climate and how it has changed over time
- CLO4 : Use physical and mathematical concepts as tools to explain atmospheric phenomena, such as the rotation around high and low pressure systems, the existence of jet streams, the formation of convective storms, or the greenhouse effect.

General Assessment Information

Continuous quizzes are short online quizzes which focus on 2-3 main take-home messages for each individual lecture. They are designed to help the students keep up with the lectures throughout the term, and to guide learning towards the most important subjects.

Mid term and final exams are both oral exams of 30 minutes total for each student. These exams focus on understanding of the fundamental processes discussed during the lectures, and numerical calculations or mathematical developments or proofs are not subject to examination.

Grading Basis

Standard

Requirements to pass course

Achieve a composite total mark of 50 of 100 with respective weighting of each assessment.

Course Schedule

Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

Course Resources

Course Evaluation and Development

Both myExperience feedback and personal discussions are flowing into constant improvement of the course. Examples include form and scope of assessments, availability of lecture notes, and organisation of guest lectures.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Martin Jucker					No	Yes

Other Useful Information

Academic Information

Upon your enrolment at UNSW, you share responsibility with us for maintaining a safe, harmonious and tolerant University environment.

You are required to:

- Comply with the University's conditions of enrolment.
- Act responsibly, ethically, safely and with integrity.
- Observe standards of equity and respect in dealing with every member of the UNSW community.
- Engage in lawful behaviour.
- Use and care for University resources in a responsible and appropriate manner.
- Maintain the University's reputation and good standing.

For more information, visit the [UNSW Student Code of Conduct Website](#).

Academic Honesty and Plagiarism

Referencing is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism.

Further information about referencing styles can be located at <https://student.unsw.edu.au/referencing>

Academic integrity is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage. At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.

Further information about academic integrity, plagiarism and the use of AI in assessments can be located at:

- The [Current Students site](#),
- The [ELISE training site](#), and
- The [Use of AI for assessments](#) site.

The Student Conduct and Integrity Unit provides further resources to assist you to understand your conduct obligations as a student: <https://student.unsw.edu.au/conduct>

Submission of Assessment Tasks

Penalty for Late Submissions

UNSW has a standard late submission penalty of:

- 5% per day,
- for all assessments where a penalty applies,
- capped at five days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and
- no permitted variation.

Any variations to the above will be explicitly stated in the Course Outline for a given course or assessment task.

Students are expected to manage their time to meet deadlines and to request extensions as early as possible before the deadline.

Special Consideration

If circumstances prevent you from attending/completing an assessment task, you must officially apply for special consideration, usually within 3 days of the sitting date/due date. You can apply by logging onto myUNSW and following the link in the My Student Profile Tab. Medical documentation or other documentation explaining your absence must be submitted with your application. Once your application has been assessed, you will be contacted via your student email address to be advised of the official outcome and any actions that need to be taken from there. For more information about special consideration, please visit: <https://student.unsw.edu.au/special-consideration>

Important note: UNSW has a “fit to sit/submit” rule, which means that if you sit an exam or submit a piece of assessment, you are declaring yourself fit to do so and cannot later apply for Special Consideration. This is to ensure that if you feel unwell or are faced with significant circumstances beyond your control that affect your ability to study, you do not sit an examination or submit an assessment that does not reflect your best performance. Instead, you should apply for Special Consideration as soon as you realise you are not well enough or are otherwise unable to sit or submit an assessment.

Faculty-specific Information

Additional support for students

- [The Current Students Gateway](#)
- [Student Support](#)
- [Academic Skills and Support](#)
- [Student Wellbeing, Health and Safety](#)
- [Equitable Learning Services](#)
- [UNSW IT Service Centre](#)
- Science EDI Student [Initiatives](#), [Offerings](#) and [Guidelines](#)