



# ENVS3102

## Urban Climate and Air Quality

Session 1, In person-scheduled-weekday, North Ryde 2025

*School of Natural Sciences*

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#### **Disclaimer**

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## General Information

Unit convenor and teaching staff

Convenor

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By appointment

Lecturer

Vladimir Strezov

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By appointment

Credit points

10

Prerequisites

130cp at 1000 level or above including ENV51017

Corequisites

Co-badged status

Unit description

More than half of the world's population lives in urban areas, and virtually all countries are becoming increasingly urbanised. Australia is one of the most urbanised countries in the world, with about 90% of our pollution living in urban areas. For these reasons, urban climate and air quality are extremely important, directly influencing the health and wellbeing of billions of people around the world. This unit explores urban climate and air quality through detailed study of interactions between the atmosphere and the Earth's surface in the relatively thin veneer of air that we live in known as the planetary boundary layer. The unit will be of interest to all students in science and engineering and more generally any student with an interest in the environment, and provides knowledge and skills that will be of value for a range of careers and employers, ranging from environmental consultancy and local and state government, to private industry.

Learning in this unit enhances student understanding of global challenges identified by the United Nations Sustainable Development Goals ([UNSDGs](#)) Good Health and Well Being; Sustainable Cities and Communities; Climate Action

## Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are

available at <https://www.mq.edu.au/study/calendar-of-dates>

## Learning Outcomes

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

**ULO1:** describe urban climate and air quality, including the physical, chemical and biological processes operating to produce or change the state of the urban atmosphere.

**ULO2:** demonstrate knowledge and conceptual understanding of the dispersive capabilities of the atmospheric environment near the surface of the earth, how pollutants emitted into the atmospheric environment move and interact with the surface.

**ULO3:** examine and integrate scientific information from various primary and secondary sources.

**ULO4:** apply practical knowledge to undertake analysis of climate and air quality data.

**ULO5:** demonstrate practical laboratory and field based skills associated with typical measurement problems in the field of climate science.

## General Assessment Information

### Requirements to Pass this Unit

To pass this unit you must achieve a total mark equal to or greater than 50%.

We strongly encourage all students to actively participate in all learning activities. Regular engagement is crucial for your success in this unit, as these activities provide opportunities to deepen your understanding of the material, collaborate with peers, and receive valuable feedback from instructors, to assist in completing the unit assessments. Your active participation not only enhances your own learning experience but also contributes to a vibrant and dynamic learning environment for everyone.

### Assessment Criteria

Assessment at Macquarie University is standards-based, as outlined in the [Assessment Policy](#). This means that your work will be assessed against clear criteria, and these criteria (e.g. in a rubric) will be made available when the assessment tasks are released to you on iLearn.

### Submission of Assessments

All assessments must be submitted online through [Turnitin](#) unless otherwise indicated. Links for the submission of each assessment will be provided on [iLearn](#). Please do not submit your assessments via email or in hard copy.

### Marking of Assessments

Written assessments will be marked through Turnitin with marks and feedback provided through GradeMark. All assessment grades will be available in Gradebook on iLearn.

We aim to return your assessment grades and feedback within three weeks of the

assessment due date and before the next assignment is due. We appreciate your patience and will advise you through iLearn when your marks and feedback are available for viewing.

## Late Assessment Submission Penalty

Unless a Special Consideration request has been submitted and approved, a 5% penalty (of the total possible mark of the task) will be applied for each day a written report or presentation assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a grade of '0' will be awarded even if the assessment is submitted. The submission time for all uploaded assessments is 11:55 pm. A 1-hour grace period will be provided to students who experience a technical concern.

For any late submission of time-sensitive tasks, such as scheduled tests/exams, performance assessments/presentations, and/or scheduled practical assessments/labs, please apply for [Special Consideration](#).

### Assessments where Late Submissions will be accepted:

Literature review – YES, Standard Late Penalty applies

Scientific report – YES, Standard Late Penalty applies

## Special Consideration

The Special Consideration Policy aims to support students who have been impacted by short-term circumstances or events that are serious, unavoidable and significantly disruptive, and which may affect their performance in assessment. If you experience circumstances or events that affect your ability to complete the assessments in this unit on time, please inform the convenor and submit a Special Consideration request through <https://connect.mq.edu.au>.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Scientific report</a>	20%	No	11:55pm Sunday 27th April
<a href="#">Quizzes</a>	60%	No	In Practical class Weeks 4, 7, 10 and 12
<a href="#">Literature review</a>	20%	No	11:55pm Sunday 8th June

### Scientific report

Assessment Type <sup>1</sup>: Report

Indicative Time on Task <sup>2</sup>: 20 hours

Due: **11:55pm Sunday 27th April**

Weighting: **20%**

Scientific report of urban climate and air quality topic.

On successful completion you will be able to:

- describe urban climate and air quality, including the physical, chemical and biological processes operating to produce or change the state of the urban atmosphere.
- apply practical knowledge to undertake analysis of climate and air quality data.

## Quizzes

Assessment Type <sup>1</sup>: Quiz/Test

Indicative Time on Task <sup>2</sup>: 20 hours

Due: **In Practical class Weeks 4, 7, 10 and 12**

Weighting: **60%**

Four quizzes throughout the session.

On successful completion you will be able to:

- describe urban climate and air quality, including the physical, chemical and biological processes operating to produce or change the state of the urban atmosphere.
- demonstrate knowledge and conceptual understanding of the dispersive capabilities of the atmospheric environment near the surface of the earth, how pollutants emitted into the atmospheric environment move and interact with the surface.
- examine and integrate scientific information from various primary and secondary sources.
- apply practical knowledge to undertake analysis of climate and air quality data.
- demonstrate practical laboratory and field based skills associated with typical measurement problems in the field of climate science.

## Literature review

Assessment Type <sup>1</sup>: Literature review

Indicative Time on Task <sup>2</sup>: 19 hours

Due: **11:55pm Sunday 8th June**

Weighting: **20%**

Literature review of urban climate and air quality topic.

On successful completion you will be able to:

- describe urban climate and air quality, including the physical, chemical and biological processes operating to produce or change the state of the urban atmosphere.
- examine and integrate scientific information from various primary and secondary sources.

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<sup>1</sup> If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the [Writing Centre](#) for academic skills support.

<sup>2</sup> Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

## Delivery and Resources

### Methods of Communication

We will communicate with you via your university email or through announcements on iLearn. Queries to convenors can either be placed on the iLearn discussion board or sent to [ENV53102@mq.edu.au](mailto:ENV53102@mq.edu.au) from your **university email** address.

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](https://policies.mq.edu.au) (<https://policies.mq.edu.au>). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Assessment Procedure](#)
- [Complaints Resolution Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

Students seeking more policy resources can visit [Student Policies](https://students.mq.edu.au/support/study/policies) (<https://students.mq.edu.au/support/study/policies>). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

To find other policies relating to Teaching and Learning, visit [Policy Central](https://policies.mq.edu.au) (<https://policies.mq.edu.au>) and use the [search tool](#).

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/student-conduct>

## Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit [connect.mq.edu.au](https://connect.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## Academic Integrity

At Macquarie, we believe [academic integrity](#) – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free [online writing and maths support](#), [academic skills development](#) and [wellbeing consultations](#).

## Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

## Academic Success

[Academic Success](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Workshops](#)
- [Chat with a WriteWISE peer writing leader](#)
- [Access StudyWISE](#)
- [Upload an assignment to Studiosity](#)
- [Complete the Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

## Student Services and Support

Macquarie University offers a range of [Student Support Services](#) including:

- [IT Support](#)
- [Accessibility and disability support](#) with study

- Mental health [support](#)
- [Safety support](#) to respond to bullying, harassment, sexual harassment and sexual assault
- [Social support including information about finances, tenancy and legal issues](#)
- [Student Advocacy](#) provides independent advice on MQ policies, procedures, and processes

## Student Enquiries

Got a question? Ask us via the [Service Connect Portal](#), or contact [Service Connect](#).

## IT Help

For help with University computer systems and technology, visit [http://www.mq.edu.au/about\\_us/offices\\_and\\_units/information\\_technology/help/](http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/).

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

## Changes from Previous Offering

We value student feedback to be able to continually improve the way we offer our units. As such we encourage students to provide constructive feedback via student surveys, to the teaching staff directly, or via the FSE Student Experience & Feedback link in the iLearn page

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Unit information based on version 2025.03 of the [Handbook](#)