



ENVS3102

Urban Climate and Air Quality

Session 1, Weekday attendance, North Ryde 2021

Archive (Pre-2022) - Department of Earth and Environmental Sciences

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Notice

As part of [Phase 3 of our return to campus plan](#), most units will now run tutorials, seminars and other small group activities on campus, and most will keep an online version available to those students unable to return or those who choose to continue their studies online.

To check the availability of face-to-face activities for your unit, please go to [timetable viewer](#). To check detailed information on unit assessments visit your unit's iLearn space or consult your unit convenor.

General Information

Unit convenor and teaching staff

Unit Convenor

Paul Beggs

paul.beggs@mq.edu.au

Please email for an appointment

Vladimir Strezov

vladimir.strezov@mq.edu.au

Credit points

10

Prerequisites

(130cp at 1000 level or above) including (GEOS216 or ENVE216 or ENV5216 or ENV52116 or EESC2160)

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 population 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.

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

Details of the Literature Review and Scientific Report assessments will be provided in Weeks 1 and 8 respectively.

The Literature Review and Scientific Report assessments must be submitted via Turnitin (a link will be provided on the iLearn web site for the unit).

Quizzes 1-4 will be completed in iLearn.

Late assessment submissions are permitted and the penalty to be applied to late submissions will be 10% of the assessment value per day (e.g., an assessment weighted at 20% will be penalised at 2% per day).

Extension requests should be directed to the Unit Convenor.

Assessment Tasks

Name	Weighting	Hurdle	Due
Scientific report	20%	No	Friday 28 May 2021
Literature review	20%	No	Thursday 1 April 2021
Quizzes	60%	No	Quiz1: Week 4; Quiz2: Week 8; Quiz3: Week 10; Quiz4: Week 13

Scientific report

Assessment Type ¹: Report

Indicative Time on Task ²: 20 hours

Due: **Friday 28 May 2021**

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.

Literature review

Assessment Type ¹: Literature review

Indicative Time on Task ²: 19 hours

Due: **Thursday 1 April 2021**

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.

Quizzes

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 20 hours

Due: **Quiz1: Week 4; Quiz2: Week 8; Quiz3: Week 10; Quiz4: Week 13**

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.

¹ 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.

² 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

Classes

There is a two hour Workshop and a three hour Practical for this unit that you are expected to attend each week. See the University Class Timetable for details (<https://timetables.mq.edu.au/2021/>).

Required Text

The required text for this unit is:

Oke TR, Mills G, Christen A, Voogt JA (2017) Urban climates. Cambridge University Press, Cambridge.

The Library provides online access [QC981.7.U7 O34 2017].

Also highly recommended:

Oke TR (1987) Boundary layer climates (2nd ed). Routledge, London. [QC981.7.M5.O34/1987]

Unit Schedule

See the iLearn web site for the Unit Schedule.

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](#)
- [Grade Appeal Policy](#)
- [Complaint Management 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 ask.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Student Support

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

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- [Getting help with your assignment](#)
- [Workshops](#)
- [StudyWise](#)
- [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

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

If you are a Global MBA student contact globalmba.support@mq.edu.au

IT Help

For help with University computer systems and technology, visit 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.