ENVS3102

Urban Climate and Air Quality

Session 1, In person-scheduled-weekday, North Ryde 2023

School of Natural Sciences

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General Information

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Credit points
10

Prerequisites
(130cp at 1000 level or above) including (GEOS216 or ENVE216 or ENVS216 or ENVS2116 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 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.

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%.

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 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 quizzes, 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 ask.mq.edu.au.

Assessment Tasks

Name	Weighting	Hurdle	Due
Quizzes	60%	No	Quiz 1:Week 4; Quiz 2:Week 7; Quiz 3:Week 10; Quiz 4:Week 13
Literature review	20%	No	Sunday 23 April 2023
Scientific report	20%	No	Sunday 28 May 2023

Quizzes

Assessment Type [1]: Quiz/Test
Indicative Time on Task [2]: 20 hours
Due: **Quiz 1:Week 4; Quiz 2:Week 7; Quiz 3:Week 10; Quiz 4: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.

Literature review

Assessment Type [1]: Literature review
Indicative Time on Task [2]: 19 hours

Due: **Sunday 23 April 2023**
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.

Scientific report

Assessment Type [1]: Report
Indicative Time on Task [2]: 20 hours
Due: **Sunday 28 May 2023**
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.

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[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

In Week 1, there will be a Lecture on the Monday, but there won't be any Practical classes.

Due to a clash with another 3000-level ENVS unit, the **Thursday Practical class will start at 1:00 pm and finish at 4:00 pm** (NOT start at 12:30 pm and finish at 3:30 pm as shown in the Univerity Timetable). If there is any problem with this, then please contact Assoc Prof Beggs.

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 ENVS3102@mq.edu.au from your **university email** address.

COVID Information

For the latest information on the University's response to COVID-19, please refer to the Coronavirus infection page on the Macquarie website: https://www.mq.edu.au/about/coronavirus-faqs. Remember to check this page regularly in case the information and requirements change during semester. If there are any changes to this unit in relation to COVID, these will be communicated via iLearn.

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (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). 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) 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

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/

The Writing Centre

The Writing Centre 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 AskMQ, 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/.

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.