GGR1422H: The Geography of Urban Air Pollution
Time: Thursday 1:10 pm – 4:00 pm
Location: DV2094C (UTM)

Course Description
This course will examine current local to global issues of urban air pollution. Topics covered will include understanding sources of air pollution, human health effects and study designs, stages of urban development and air pollution, mitigation approaches, global challenges and current air pollution issues by region. Measurement technologies and their applications, including low-cost sensors and regulatory grade instrumentation will be explored. Students will apply tools for spatial and temporal modelling of urban air pollution including dispersion modelling, spatial interpolation, remote sensing and land use regression modelling.

Course Instructor:  Dr. Matthew Adams
Office: DV3261
Office Hours: By Appointment:
md.adams@utoronto.ca

Course Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>Jan 9</td>
<td>Air Pollution Introduction – Select Topic for Review Paper</td>
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<tr>
<td>Jan 16</td>
<td>Passive Monitoring of Air Pollution</td>
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<tr>
<td>Jan 23</td>
<td>EPA Methods for Air Monitoring</td>
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<tr>
<td>Jan 30</td>
<td>Training on Passive Monitoring (DV 1075)</td>
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<tr>
<td>Feb 6</td>
<td>Air Quality and Health</td>
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<tr>
<td>Feb 13</td>
<td>Air Pollution Sensors</td>
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<tr>
<td>Feb 20</td>
<td>Reading Week (No Classes)</td>
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<tr>
<td>Feb 27</td>
<td>Emissions Modelling / Dispersion Modelling</td>
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<tr>
<td>Mar 5</td>
<td>UAVs (Chandula)</td>
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<tr>
<td>Mar 12</td>
<td>Transportation Related Air Pollution (Jenny)</td>
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<tr>
<td>Mar 19</td>
<td>Land Use Regression (Felix)</td>
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<tr>
<td>Mar 26</td>
<td>Exam (2 Hours, written)</td>
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ASSESSMENT STRUCTURE AND DATES

<table>
<thead>
<tr>
<th>Item</th>
<th>Weight</th>
<th>PhD students – 2 Hours; MSc students – 1 Hour</th>
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<tbody>
<tr>
<td>In-Class Lecture</td>
<td>10%</td>
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<tr>
<td>Review Paper Draft</td>
<td>15%</td>
<td>Feb 27 (In-Class)</td>
</tr>
<tr>
<td>Review Paper</td>
<td>40%</td>
<td>Apr 3 at 5:00 pm</td>
</tr>
<tr>
<td>Final Exam (3 Hours)</td>
<td>35%</td>
<td>During Exam Period</td>
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Readings:
Jan 16: Passive Monitoring or Air Pollution

Jan 23 EPA Methods for Air Monitoring

Jan 30 Training on Passive Monitoring (DV 1075)

Feb 6 Air Quality and Health

Feb 13 Air Pollution Sensors

Feb 20 Reading Week (No Classes):

Feb 27 Emissions Modelling / Dispersion Modelling

Mar 5 UAVs (Chandula)
- To be sent out by Chandula by Feb 27

Mar 12 Transportation Related Air Pollution (Jenny)
- To be sent out by Jenny by Mar 5

Mar 19 Land Use Regression (Felix)
- To be sent out by Felix by Mar 12
Late Assignments
Instructors are not obligated to accept late work, except where there are legitimate, documented reasons beyond a student’s control. In such cases a late penalty is not normally applied. In all other circumstances, a 25% per day late penalty will apply.

Attendance and Participation
Students are expected to attend all classes. Students who have more than two unexcused absences classes will receive a failing grade.

Accessibility and Accommodations
The University of Toronto is committed to accessibility. If you require accommodations because you are disabled, or have any accessibility concerns about the course, the classroom or course materials, please contact Accessibility Services as soon as possible: http://studentlife.utoronto.ca/as

Where there is an accommodation recommended by Accessibility Services, the department and/or instructors will be provided with an accommodation letter.

Academic Integrity
Academic misconduct by graduate students is taken very seriously. The University's policy on academic misconduct is found in the Code of Behaviour on Academic Matters (the Code). Students in graduate studies are expected to commit to the highest standards of integrity and to understand the importance of protecting and acknowledging intellectual property. For example, it is assumed that they bring to their graduate studies a clear understanding of how to cite references appropriately, thereby avoiding plagiarism.

Regarding plagiarism, the Code includes the following statements:

B.i.1. It shall be an offence for a student knowingly:

(d) to represent as one's own idea or expression of an idea or work of another in any academic examination or term test or in connection with any other form of academic work, i.e., to commit plagiarism.

Wherever in the Code an offence is described as depending on "knowing," the offence shall likewise be deemed to have been committed if the person ought reasonably to have known.

Other academic offences include the possession and/or use of unauthorized aids in examinations, submitting the same paper for different courses, forgery (whether of academic records or other documents), concocting facts or references to sources, personating someone, and other forms of cheating and academic dishonesty. Please refer to sections B.i.1. and B.i.3. in the Code for detailed descriptions of offences applicable to students.

The policy on academic misconduct and the process for handling an allegation of academic misconduct is outlined at http://www.sgs.utoronto.ca/facultyandstaff/Pages/Academic-Integrity.aspx

Coursework Extensions
The authority to grant an extension to submit coursework beyond the sessional grade deadline is with the department and not the instructor of the course. To request a formal extension, students must submit a Coursework Extension Form, completed by both the student and course instructor, to the relevant graduate department prior to the final grade deadline.

In order to ensure fairness in granting extensions, the department must be reasonably certain that:
- The reasons for delay are serious and substantiated.
- The student is not granted unfair advantage over other students in the course.
- The student has a reasonable chance of completing the outstanding work within the time allotted.
- The normal and satisfactory completion of any new coursework is not in jeopardy.

Extension requests for medical reasons (e.g. short-term illness) must be accompanied by a medical note. Extension requests for students with accommodations due to disability must be supported by documentation from Accessibility Services. Extension requests for other reasons must be detailed in the form or a note to the department.

**Religious Accommodations**

Students must alert instructors in a timely fashion to any upcoming religious observances and anticipated absences. Instructors will make every reasonable effort to avoid scheduling tests, exams or other compulsory activities at these times. In the case of an unavoidable conflict with a compulsory activity, every reasonable effort is made to give students the opportunity to make up missed work.

**Course Enrolment and Quercus**

Acorn is the only indicator of official course enrolment; Quercus is not. Students enrolled in Acorn will be automatically populated to a course’s Quercus site within 24 hours of enrolling. In some cases, if a student is on a course wait list or there is another delay in processing registration an instructor may give a student access to Quercus as a guest. This will not constitute official enrolment and students are responsible for making sure the course is added correctly using Acorn.

**Auditing**

Students who wish to audit a course must obtain permission directly from the course instructor within the first week of class. Permission is subject to available space and can only be granted by the course instructor.

Only registered students at the University of Toronto may audit courses. Auditing entitles a student to attend lectures only. Students may not submit any written work, attend labs/tutorials or write tests/exams. The student will not be enrolled in the course and the course will not appear on their transcript. The department does not provide certificates of attendance.

**Copyright in Instructional Settings**

If a student wishes to record (tape, video, photograph, etc.) any lecture presentations or other similar materials provided by the instructor; the instructor’s written consent must be obtained beforehand. Otherwise, all such reproduction is infringement of copyright and prohibited. In the case of private use by students with disabilities, the instructor’s consent shall not be unreasonably withheld.