

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

Course Code and Number: GEOG 307	Number of Credits: 4 Course credit policy (105)																
Course Full Title: Climates of Cities Course Short Title (if title exceeds 30 characters):																	
Faculty: Faculty of Social Sciences	Department (or program if no department): Geography and the Environment																
Calendar Description: An exploration of the climatic effects of urbanization with a focus on the collection and analysis of urban climate data. Human-weather interaction in the urban setting including the degradation of the urban atmosphere and potential mitigation techniques are investigated																	
Prerequisites (or NONE):	One of the following: GEOG 201, GEOG 219/BIO 219, or 45 university-level credits. Note: As of January 2018, prerequisites will change to: 45 university-level credits.																
Corequisites (if applicable, or NONE):	None																
Pre/corequisites (if applicable, or NONE):	None																
Equivalent Courses (cannot be taken for additional credit) Former course code/number: Cross-listed with: Equivalent course(s): <i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>	Transfer Credit Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Transfer credit requested (OReg to submit to BCCAT): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form) Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No To find out how this course transfers, see bctransferguide.ca .																
Total Hours: 90 Typical structure of instructional hours: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Lecture hours</td><td style="text-align: center;">45</td></tr> <tr><td>Seminars/tutorials/workshops</td><td></td></tr> <tr><td>Laboratory hours</td><td style="text-align: center;">20</td></tr> <tr><td>Field experience hours</td><td style="text-align: center;">25</td></tr> <tr><td>Experiential (practicum, internship, etc.)</td><td></td></tr> <tr><td>Online learning activities</td><td></td></tr> <tr><td>Other contact hours:</td><td></td></tr> <tr><td style="text-align: right;">Total</td><td style="text-align: center;">90</td></tr> </table>	Lecture hours	45	Seminars/tutorials/workshops		Laboratory hours	20	Field experience hours	25	Experiential (practicum, internship, etc.)		Online learning activities		Other contact hours:		Total	90	Special Topics Will the course be offered with different topics? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, different lettered courses may be taken for credit: <input type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit <i>Note: The specific topic will be recorded when offered.</i> Maximum enrolment (for information only): 25 Expected frequency of course offerings (every semester, annually, every other year, etc.): Once every other year.
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Department / Program Head or Director: Steven Marsh	Date approved: December 2016																
Faculty Council approval	Date approved: January 2017																
Campus-Wide Consultation (CWC)	Date of posting: March 17, 2017																
Dean/Associate VP:	Date approved: January 2017																
Undergraduate Education Committee (UEC) approval	Date of meeting: March 24, 2017																

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate written, oral and numerical competency in the science of urban climates
2. Explain the anthropogenic processes that influence the spatial and temporal variability of climate in urban environments.
3. Collect weather data in order to assess the spatial and temporal variability of urban climate.
4. Conduct quantitative analysis of climatological data collected within the urban environment.
5. Describe methods that may be utilized to mitigate anthropogenic effects on climate within urban environments.
6. Create a piece of research on a self-selected topic and communicate the results in oral and written formats.
7. Explain the air pollution climatology of southwestern British Columbia
8. Assess the health effects of air pollutants.
9. Create a sampling protocol to assess the spatial variation of the urban climate.
10. Critically reflect on your learning from in-class discussion, field work and related research.
11. Complete a formal field report.

Prior Learning Assessment and Recognition (PLAR)

Yes No, PLAR cannot be awarded for this course because

Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)

The format of the course may include lectures, guest speakers, class discussions, weekly labs, oral presentations and the collection of field data.

Grading system: Letter Grades: Credit/No Credit: Labs to be scheduled independent of lecture hours: Yes No

NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.

Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)

Author (surname, initials)	Title (article, book, journal, etc.)	Current ed.	Publisher	Year
1. De Dear, Richard, et al.	Biometeorology and Urban Climatology at the turn of the millennium: selected papers from the conference ICB-ICUC'99	<input type="checkbox"/>	Geneva: World Meteorological Society	1999
2. Moussiopoulos, N.	Air Quality in Cities	<input type="checkbox"/>	New York: Springer	2003
Gartland, Lisa	Heat Islands. Understanding and Mitigating Heat in Urban Areas.	<input type="checkbox"/>	Earthscan	2008
4. Oke, T.R.	Boundary Layer Climates	<input type="checkbox"/>	New York: Routledge	1987
5. T.R. Oke, G. Mills, A. Christen, J.A. Voogt	.Urban Climates	<input type="checkbox"/>	Cambridge University Press	2017

Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)

None.

Typical Evaluation Methods and Weighting

Final exam:	25%	Assignments:	30%	Midterm exam:	%	Practicum:	%
Quizzes/tests:	%	Lab work:	30%	Field experience:	%	Shop work:	%
Reflection Journal:	15%	Other:	%	Other:	%	Total:	1000%

Details (if necessary):**Typical Course Content and Topics**

Lecture Topics:

1. Introduction to the science of urban climates.
2. Radiation and energy balance within an urban environment.
3. Anthropogenic heat production and heat islands.
4. Urban roughness and effects on circulation in urban environments.
5. Urban effects on cloud development and precipitation.
6. Climate effects on urban hydrology.
7. Air pollution climatology.
8. Health impacts from air pollution in urban centres.
9. Mitigation of the negative effects of urban climates
10. Urban forestry as a mitigation technique.
- 11/12. Student presentations.