

CAPILANO UNIVERSITY COURSE OUTLINES			
<b>TERM:</b>	<b>FALL 2016</b>	<b>COURSE NO:</b>	<b>GEOGRAPHY 114</b>
<b>INSTRUCTOR:</b>		<b>COURSE NAME:</b>	<b>WEATHER &amp; CLIMATE I</b>
<b>OFFICE:</b>	<b>LOCAL:</b>	<b>SECTION NO(S):</b>	<b>CREDITS: 4</b>
<b>E-MAIL:</b>			

#### COURSE FORMAT:

Three instructional hours plus two lab hours, and an additional hour delivered through other activities, per week for a 15-week semester, which includes two weeks for final exams.

#### COURSE PREREQUISITES:

None.

**NOTES:** Both GEOG 112 and 114 are lab science courses and fulfil university science requirements. GEOG 112 and GEOG 114 can be taken in any order, or at the same time.. This course is an approved Quantitative/Analytical course for baccalaureate degrees.

#### COURSE DESCRIPTION:

Geography 114 is a course about weather and climate. **Weather** is the day-to-day variation in the state of the atmosphere. The elements of weather are temperature, pressure, clouds and fog, precipitation, and wind. Weather, averaged over many years, becomes **climate**, a significant characteristic of a place. The overall objective of this course is to show how air, water, energy, and Earth's surface interact to produce weather and, ultimately, climate.

In this course we are interested in the **processes** responsible for weather and its variability. We will explore each weather element individually, but the interactions between these elements will also be discussed. With an aim to understanding the elements of weather, we will study the composition and structure of the atmosphere, the way in which Earth's orbit creates our seasons, the nature of energy transfer in Earth's atmosphere and at its surface, the variability of water vapour in our atmosphere, and the processes controlling the vertical motions of air parcels. We will consider how the above, combined with the general circulation of the atmosphere and oceans, produces global climate patterns. In turn, we will see how global climate patterns play an important role in controlling the global distribution of vegetation.

Where applicable, we will examine the complex role people play in influencing both atmospheric composition and atmospheric processes. An important theme in this course is **climate change** resulting from human activities.

This is a Geography course for several reasons. It is about a part of the Earth **system**: the atmosphere. We will consider **interrelationships** between the different parts of the Earth system, between the various elements of weather, and between the activities of humans and the atmosphere. We will also study the **spatial variability** of climate. For much of this, we will rely on **maps** as tools.

The objective of both the labs, and the term project, is to provide opportunities to *apply* the course content. Labs are an essential part of the course. These exercises involve mathematical problem solving, graphing, and the analysis of weather maps. To be successful with the lab work, students are expected to be able to do basic arithmetic; this

includes having a working knowledge of such concepts as percentages, ratios, and exponents. The term project requires that students observe and analyze the weather for one week.

**STUDENT LEARNING OUTCOMES:**

After completing this course students should be able to

- distinguish between weather and climate,
- interpret climate graphs and surface weather maps,
- understand the major atmospheric processes which produce weather, especially our local weather,
- describe and account for the global distribution of climate, and
- identify the causes and effects of anthropogenic climate change.

**REQUIRED TEXT:**

Christopherson, Robert, Ginger H. Birkeland, Mary-Louise Byrne, and Philip Giles. Geosystems. 4<sup>th</sup> Canadian Ed. Don Mills, Ontario: Pearson Canada Inc., 2016.

**COURSE CONTENT:**

Week 1	<b>Introduction to Weather</b>
Week 2	<b>Introduction to Weather, cont. Seasons</b>
Week 3	<b>Structure of the Atmosphere Composition of the Atmosphere</b>
Week 4	<b>Energy</b>
Week 5	<b>Energy, cont.</b>

**QUIZ (TWO PARTS)**

Week 6	<b>Temperature</b>
Week 7	<b>Atmospheric Water Vapour</b>
Week 8	<b>Atmospheric Water Vapour, cont.</b>

**MIDTERM EXAM**

Week 9	<b>Atmospheric Stability</b>
Week 10	<b>Precipitation Winds and the General Circulation of the Atmosphere</b>
Week 11	<b>Winds and the General Circulation of the Atmosphere, cont. Air Masses, Fronts, and Mid-latitude (Wave) Cyclones</b>
Week 12	<b>Global Climate and Vegetation</b>
Week 13	<b>Global Climate and Vegetation, cont.</b>

**LAB EXAM**

Weeks 14 and 15      **FINAL EXAM PERIOD**

**EVALUATION PROFILE:**

Quiz .....	5%
Two Lab Quizzes.....	10%
Fourth Hour Assignment.....	5%
Term Project.....	15%
Lab Exam .....	15%
Midterm Exam.....	25%
Final Exam .....	<u>25%</u>
	100%

**The lab portion of the course includes the lab quizzes, the fourth hour assignments, the term project, and the lab exam. A passing grade (50% or more) is required on the lab portion of the course for the student to obtain a passing grade for the entire course.**

**GRADING PROFILE:**

A+ = 90 - 100%	B+ = 77 - 79%	C+ = 67 - 69%	D = 50 - 59%
A = 85 - 89	B = 73 - 76	C = 63 - 66	F = 0 - 49
A- = 80 - 84	B- = 70 - 72	C- = 60 - 62	

**OPERATIONAL DETAILS:**

*Capilano University has policies on Academic Appeals (including appeal of final grades), Student Conduct, Cheating and Plagiarism, Academic Probation and other educational issues. These and other policies are available on the University website.*

Office Hours: To be announced.

Fourth Hour: Fourth hour exercises will be assigned roughly once a week.

Materials needed for class:

- . pencil
- . eraser
- . a few coloured pencils
- . 12"/30 cm ruler
- . calculator

Attendance: Regular attendance is highly recommended.

Responsibility for Material covered during a missed class:

When students are absent from class, they are still responsible for the material covered during their absence, including announcements, assigned readings, hand-outs and labs. Some of the lab assignments will require the use of equipment, which will not be available outside the scheduled lab hours.

Missed exams:

Students who are unable to write the exams must have an acceptable excuse and are expected to contact the instructor before the exam. The exam must be completed as soon as possible after returning to class.

**Operational details - continued****Study Time:**

**Because this course has a two-hour lab component, the amount of required study time will be greater than a regular three-credit course. Additional study time may be also required if a student's background in math and science needs to be reviewed or upgraded. Help is available through the Math Learning Centre (BR289).**

**Incomplete Grades:**

Grades of Incomplete "I" will be granted only if there is a valid reason for extending the evaluation deadline and if the student has a reasonable chance of improving their grade to pass the course.

**English Usage:**

All written work submitted must use good academic English and follow the guidelines provided in the "*Capilano University Guide to Writing Assignments*" (available from the University Bookstore).

**Cheating/ Plagiarism:**

Plagiarism is the presentation of another person's work or ideas as if they were one's own. Plagiarism is both dishonest and a rejection of the principles of scholarship. Information about how to avoid plagiarism by proper documentation of sources is available from the Library and the Writing Centre. All students should familiarize themselves with the *University Policy on Cheating and Plagiarism* (See the *University Website*) as such behavior can result in suspension from the University.

**Cell Phones:**

During all classes, turn off cell phones and remove them from the desk.

**Emergency Procedures:**

Please read the emergency procedures posted on the wall of the classroom.