

## Instructor Contact



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**Office Hours:** Days and times @ location

## Student Help

[TA Contacts:](#)

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## Syllabus

**Course Description:** Physical principles underlying weather and climates. Thermal, moisture and wind climates from the scale of plants and animals to the globe. Daily weather systems and climate change. We discuss large scale weather and climate processes relevant to applications in forestry and agriculture.

The course consists of thirty-four one-hour lectures and eight mandatory two-hour [laboratory exercises](#). The accompanying [laboratory exercises](#) provide hands-on experiences explaining physical principles and introducing biometeorological instrumentation.

**Course Delivery:** Due to Covid-19, this course will be offered online for the first time in it's history. I will post [short 15 minute videos](#) every week at the allotted lecture time (see Modules) as well as [Notes](#) (commented PDFs of powerpoint slides) and [readings](#). Each week I will provide an opportunity for synchronous Q&A. I will also give a weekly informal [FRIDAY WEATHER DISCUSSION](#) in which we look at realtime online weather products

**Evaluation:**

**5** Short Online Lecture Review Quizzes = **25%** in total

**8** Laboratories - **40%** in total

**1** Final exam = **35%**

**TOTAL 100%**

**TEXT Book:** You do **NOT** need to buy a textbook. For those who like to have access to a text there are free online texts available as well as cheap used 2nd year meteorology texts such as Ahrens: Meteorology Today

**Lectures and Exams**

Date	Topic	
09-Sep-20	<b>1</b> Introduction and course overview.	
11-Sep-20	<b>2</b> Energy.	
14-Sep-20	<b>3</b> Radiation laws.	
16-Sep-20	<b>4</b> Incoming short-wave radiation.	
18-Sep-20	<b>5</b> Surface geometry and albedo.	
21-Sep-20	<b>6</b> Radiative transfer in plant canopies.	
23-Sep-20	<b>7</b> Long-wave radiation.	
25-Sep-20	<b>8</b> Radiation budget of Planet Earth.	
28-Sep-20	<b>9</b> Net radiation of land surfaces.	<a href="#">Quiz 1: lecture 2-7</a>
30-Sep-20	<b>10</b> Heat and temperature.	
02-Oct-20	<b>11</b> Heat conduction.	
05-Oct-20	<b>12</b> Thermal admittance.	
07-Oct-20	<b>13</b> Atmospheric humidity.	
09-Oct-20	<b>14</b> Laminar boundary layers.	<a href="#">Quiz 2: lecture 8-13</a>
12-Oct-20	<b>Thanksgiving - University closed</b>	
14-Oct-20	<b>15</b> Temperature of small objects.	
16-Oct-20	<b>16</b> Animal microclimate: basic principles..	

19-Oct-20	<b>17</b> Wind chill and thermal regulation.	
21-Oct-20	Catchup!	
23-Oct-20	Synchronous: Weather Discussion	
26-Oct-20	<b>18</b> Lapse rates and stability.	
28-Oct-20	<b>19</b> Local winds.	
30-Oct-20	<b>20</b> Turbulence and convection.	
02-Nov-20	<b>21</b> Turbulent exchange.	Quiz 3: lecture 14-19
04-Nov-20	<b>22</b> Wind breaks and wind damage.	
06-Nov-20	<b>23</b> Frost protection.	
09-Nov-20	<b>24</b> Energy balance of crops and forests.	
11-Nov-20	University closed (Remembrance Day).	
13-Nov-20	<b>25</b> Evapotranspiration.	
16-Nov-20	<b>26</b> Water balance.	
18-Nov-20	<b>27</b> Photosynthesis and CO <sub>2</sub> flux. <b>28</b> Carbon balance of crops and forests.	Quiz 4: lecture 20-25
20-Nov-20	<b>29</b> Climate classification.	
23-Nov-20	<b>30</b> Clouds and precipitation.	
25-Nov-20	<b>31</b> Winds and global circulation.	
27-Nov-20	<b>32</b> Synoptic Climatology	
30-Nov-20	<b>33</b> Climate change of the past.	Quiz 5: lecture 26-31
02-Dec-20	<b>34</b> Future climate change.	
04-Dec-20	No Lecture - Study Final	
TBD	<b>Final Examination (FAQ).</b>	
Insert syllabus here		

**Acknowledgment:** UBC's Point Grey Campus is located on the traditional, ancestral, and unceded territory of the xwməθkwəy̓əm (Musqueam) people. The land it is situated on has always been a place of learning for the Musqueam people, who for millennia have passed on in their culture, history, and traditions from one generation to the next on this site.