

# Climate and Weather

<b>Year and Campus:</b>	2016												
<b>Coordinator:</b>	Professor Ian Simmonds												
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<b>Overview:</b>	<p>The Climate and Weather major will provide the springboard for students entering careers or research any area in which an understanding of how the fluid domains of the planet function is required. This includes fundamental research into climate modelling and prediction, the role of principal wind and ocean current systems, and how these interact with the land surface to influence weather, climate and hence the environment. Careers outside research may include government organisations such as the Bureau of Meteorology and CSIRO, or areas in the aerospace industry and management. Graduates will be prepared for these pathways by developing skills in acquiring and interpreting atmospheric and oceanic information, which are crucial to being prepared to make contributions in any research or industry setting.</p> <p>This major will integrate knowledge from a range of disciplines from field-based studies to more theoretical aspects atmospheric dynamics and climate forcing. Students will complete a sequence of specialist subjects as well as integrated subjects in which they develop an understanding of how these may be applied to solve outstanding questions about the Earth's atmosphere, oceans and land surfaces influence changes to our environment. Students will gain experience preparing them for the workplace by participating in hands-on project work that requires careful time management and the clear communication of results.</p>												
<b>Learning Outcomes:</b>	<p><i>Climate and Weather Major graduates should demonstrate:</i></p> <ul style="list-style-type: none"> <li># knowledge from a range of disciplines including urban climates, convection, weather, global climate, ocean structure and circulation. Students complete a sequence of specialist and integrated subjects, in which they develop an understanding of the application of range of methods directed to understanding the Earth's atmosphere and oceans.</li> <li># skills in atmospheric and oceanic theory, data analysis, computer modelling and critical evaluation of scientific literature, which are crucial to being prepared to make contributions in research, education or in consulting roles in natural resources management and environmental consulting industries;</li> <li># understanding of the role of the cultures of science practice in the investigation of the atmosphere and ocean, and specifically the role of observations, analysis, and experimental design, models of various types, theory, and mathematics; understanding of the role of history in this science;</li> <li># appreciation of the global nature of Atmosphere and Ocean science. These media know no boundaries across the planet while, at the same time, offering different and complementary perspectives over different domains (e.g., the tropics <i>versus</i> polar regions).</li> <li># attitudes associated with being 'good global citizens' and capacity to think rigorously and sensitively about our shared environment. A significant part of the Major is associated with climate variability and climate change, and also relates to fossil fuel usage, alternative energy sources and sustainability.</li> <li># appreciation of the perspectives that cultural diversity presents. Participating in a range of group activities means students will gain experience preparing them for the workplace and other groupings.</li> <li># ability to communicate orally, and in different modes of written presentation.</li> </ul>												
<b>Structure &amp; Available Subjects:</b>	Completion of 50 points of study at Level 3.												
<b>Subject Options:</b>	<p>All four of</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>ATOC30004 Dynamical Meteorology and Oceanography</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>ATOC30006 Modern and Future Climate</td> <td>Semester 2</td> <td>12.50</td> </tr> <tr> <td>ATOC30003 Atmosphere Ocean Interaction</td> <td>Semester 2</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	ATOC30004 Dynamical Meteorology and Oceanography	Semester 1	12.50	ATOC30006 Modern and Future Climate	Semester 2	12.50	ATOC30003 Atmosphere Ocean Interaction	Semester 2	12.50
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	ATOC30008 Atmospheric Processes and Composition	Semester 1	12.5
<b>Related Course(s):</b>	Bachelor of Science		