



Course Information

Duration: 1 day

Facilitated by: Meteorologist from the Bureau of Meteorology Training Centre

Pre-requisites: Nil; limited science knowledge assumed

Course Overview

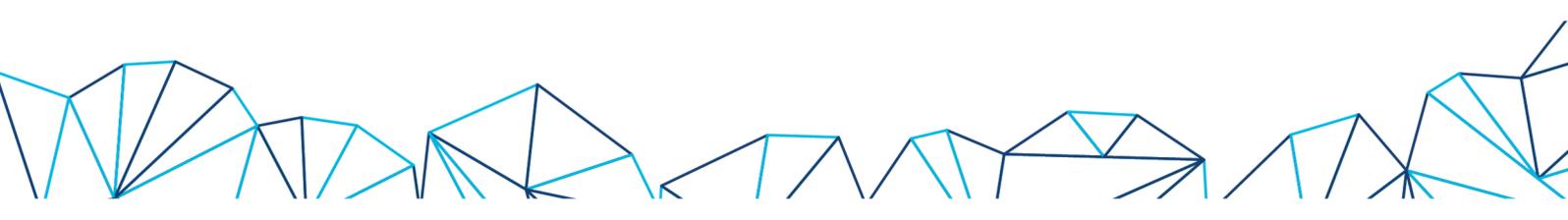
The Introduction to Climate course will equip you with a broad understanding of the influences on the Australian climate and how this is changing as the planet warms.

During the morning, we explore the differences between weather and climate, and how changes in climate over weeks to years affect the weather we experience. This includes fairly familiar phenomena such as the El Niño-Southern Oscillation to less well known variations that occur during a given season such as the Madden Julian Oscillation. Emphasis is placed on interpreting climate outlooks to facilitate informed decision making.

In the afternoon we shift from natural climate variability to human induced changes in the climate: climate change or global warming. We look at the evidence that climate change is happening now, and how we know that human activity is responsible. Other explanations are shown to be inadequate to explain how climate is changing. The day ends by looking at the impacts of climate change on the Australian climate, and ways in which we can adapt.

The course will run from 9am till 4:30pm, leaving some time at the end of the day for questions if you wish to remain a bit longer. Morning and afternoon tea are provided and a 45 minute to 1 hour lunch break will allow you to grab a bite to eat near the office. If you have a tablet or laptop, feel free to bring it along so you can access our website as we cover the different topics.

Details of the topics covered and broad learning outcomes are shown over page.



Learning Outcomes

Session	Learning Outcomes
Our Ordered Climate <i>Climate stability and the seasonal cycle</i>	Describe the basics of the climate system, the difference between weather and climate, and their prediction Navigate the Bureau's climate page Discuss the seasonal cycle over Australian and the impact on weather of the monsoon and blocking high pressure systems
El Niño-Southern Oscillation (ENSO) <i>Causes and impacts of this well-known climate driver</i>	Describe the basic model of the ENSO and its impact on Australian climate Discuss why the state of ENSO changes over time Locate and interpret the ENSO wrap-up on the BOM website
Our Variable Climate <i>Other climate drivers that affect Australia</i>	Describe the basic model of the Indian Ocean Dipole, its impact on Australian climate, and relationship to ENSO Describe the basic model of the Southern Annular Mode and its impact on Australian climate Describe the basic model of the Madden Julian Oscillation, how it is forecast, and its impacts on Australian Climate Locate and interpret the Tropical Weekly note on the BOM website
Climate Change Detection <i>How we know that the world is getting hotter and the climate is changing</i>	Describe the evidence that the Australian climate is changing Define proxy data and list the various sources Discuss the Australian Climate Observations Reference Network – Surface Air Temperature (ACORN-SAT) dataset and know where to find information about it on the BOM website Access and interpret maps and time series of climate change data from the Bureau's website
Climate Change Attribution <i>Examining the evidence for a human cause to the changing climate</i>	Explain the basics of the Greenhouse Gas Hypothesis of climate change the evidence for an increase in greenhouse gas concentrations Describe some of the alternative theories for explaining climate change, and why they are inadequate
Living in a warming world <i>How will life in Australia change as the world warms and how can we adapt?</i>	Interpret climate change statements issued by the Bureau, IPCC Describe the impacts, present and projected on the Australian climate due to climate change Discuss ways in which your sector will need to adapt to these changes