

# CLIMATE ESSENTIALS PROFESSIONAL SHORT COURSE

Online

Tuesday 28 February to  
Thursday 2 March 2023



Australian  
National  
University

Institute for  
Climate, Energy &  
Disaster Solutions



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# Course background

Climate change is already affecting communities throughout Australia, with 2016 and 2020 tied as the hottest years on record at 1.2°C above pre-industrial times.

Australia has experienced changes in extreme weather, with more frequent and intense heatwaves, storms, flooding and bushfires.

Government departments, private organisations and community groups are planning, developing and implementing strategies to address current and projected changes to our climate.

The *Climate Essentials* short course has been designed to support this. It is for professionals who want an overview of the latest developments around climate change, and covers both the science of climate change and policy responses across a range of sectors.



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Delivered by the **ANU Institute for Climate, Energy & Disaster Solutions**, the course brings together leading climate researchers from across the University.



# Course information

## Scope and content

The aim of *Climate Essentials* is to provide decision-makers in government, industry, non-government and community sectors with access to the latest ANU research and expertise on climate change impacts and adaptation. This short course provides a summary of the latest climate science, followed by an overview of climate change adaptation, climate change impacts on human health, communication and climate change and climate policy and economics. The final session focuses on opportunities and challenges associated with enabling effective climate policy. The short course is most relevant to policymakers and practitioners in Australia and across the Asia-Pacific region.

## Course details

This *Climate Essentials* will be delivered online in-real-time via a Zoom classroom. The short course covers six topics over three consecutive morning sessions, with two lectures per morning plus group discussions, Q&A sessions and breaks. Course timings are 9.30am to 12.45pm each day, from Tuesday 28 February to Thursday 2 March 2023.

## Who should attend?

This short course is most relevant to decision-makers in policy and practice who wish to gain an overview of the latest research on climate change impacts, solutions, and policy responses in Australia and its region. Participants from a range of different workplaces attend our courses and bring diverse perspectives into the classroom, which results in vibrant discussions on the climate impacts being felt across most sectors of our

economy and society.

## Important information

- To register, [click here](#) and follow the registration details as described on the page.
- Registrations close 23 February 2023.
- Early bird registrations are available (\$1350 per person, GST inc.) until 13 February 2023.
- Group discounts are available for bulk registrations of three or more participants from the same organisation until 23 February 2023.
- The course will take place subject to demand. Registrants will receive a full refund in the unlikely event that the course is cancelled.
- Email the [ICEDS Executive Education](#) team to find out more.

**Full cost - \$1495 per person (GST inc.)**

## About the ANU Institute for Climate, Energy & Disaster Solutions (ICEDS)

ICEDS connects people with climate, energy and disaster risk research from the Australian National University. Our goal is to advance innovative solutions to address climate change, energy system transitions and disasters. We facilitate integrated and interdisciplinary approaches to research, teaching, policy, industry and community engagement. We also lead the ANU Below Zero Initiative, which is working to reduce the University's greenhouse gas emissions to below zero.



# Program

## Day 1

### 9.30am – Welcome and introduction

A session welcoming participants to the course.

### 9.50-11.05am – Understanding climate change and extremes

**Professor Mark Howden, ANU Institute for Climate, Energy & Disaster Solutions**

The climate is changing. Human-caused emissions of greenhouse gases have very likely caused by global warming, which affects the climate on which our critical life-supporting systems depend. Temperature increases due to warming are coupled with changed rainfall patterns, melting of ice sheets and glaciers, sea level rise, and an increase in extreme weather events amongst other things. Meanwhile, increasing atmospheric carbon dioxide concentrations affects a range of biological processes and is reducing the pH of our oceans. In this presentation, we will look at the past to learn about how the climate has changed, and then to the future for how we can expect climate changes to manifest in the future. In particular, we will consider future extremes in terms of likelihood and impacts, and will discuss the implications of these extremes for government agencies.

At the completion of this lecture you will understand the key drivers and underlying processes that are involved in climate change, the evidence for climate and related changes that particularly impact on systems in which Australia has specific interests, and projections for future

changes and how these may differ under varying degrees of emission-reduction.

### 11.05am – Break (10 mins)

### 11.15am-12.30pm Adaptation to climate change

**Emeritus Professor Ian Noble, ANU College of Science**

The climate change adaption lecture will outline the present understanding of options, and practical implications of adapting, or not adapting, to a changing climate. It will critically discuss frameworks for understanding climate change adaptation, and step through examples of adaptation in Australia and internationally. It will discuss the roles of governments, national to local, and communities in achieving and maintaining better livelihoods that are also resilient to a changing climate.

At the completion of this lecture you will understand key concepts pertaining to, and frameworks for, climate change adaptation; the mainstreaming or integration of adaptation across policy sectors; the consequences of climate change adaptation, and of failure to adapt; and institutional and governance implications of climate change adaptation.

### END - DAY 1



# Program

## Day 2

### 9.30-10.45am Health and climate change

Professor Kristie Ebi, University of Washington

Climate change is causing injuries, illnesses, and deaths worldwide. Increases in global temperature are projected to further increase morbidity and mortality from most climate-sensitive health outcomes if actions are not taken to rapidly increase adaptation and reduce greenhouse gas emissions. The magnitude and pattern of future risks will depend not just on climate change but also on development choices. Adaptation can reduce the current and projected burdens of climate-sensitive health outcomes over the short term in many countries, but the extent to which it can do so past mid-century will depend on emission and development pathways. Under high emission scenarios, climate change will be rapid and extensive, leading to fundamental shifts in the burden of climate-sensitive health outcomes that will be challenging for many countries to manage. Unmanaged disease burdens could erode gains made in public health, economic development, and living standards worldwide. Sustainable development pathways could delay but not eliminate associated health burdens.

At the completion of this lecture, you will understand the basic associations between climate change and human health, the range of responses required to adapt to the health impacts of climate change, the health benefits of mitigation policies and technologies, and multidisciplinary and multisectoral approaches to action in the health sector.

### 10.45am – Break (15 mins)

### 11.00am-12.15pm Communicating climate change to psychologically complex creatures (humans)

Dr Bec Colvin, Crawford School of Public Policy

While many solutions to the challenge of climate change are known, their implementation is often constrained not due to technical limitations, but instead due to the complexity of the social dimension. Human beings – who we are, our values, attitudes and beliefs, the norms we follow – are one of the most confounding aspects of climate change. In this lecture, we explore key threads in the research on the social dimension of climate change, in particular the psychological basis of attitudes toward climate change and the emergence of climate change as a social-political object in Australia. Based on this, we then explore how understanding this human dimension can inform climate change policy and practice, including strategies for effective communication and engagement.

At the completion of this lecture you will understand the links between values, beliefs, ideology and attitudes to climate change, and strategies and factors to consider when communicating about climate change.

### 12.15-12.45pm Group discussion

A facilitated group discussion on the participants' learnings and ongoing questions.

## END - DAY 2



# Program

## Day 3

### 9.30-10.45am Climate and energy economics

**Dr Thomas Longden, ANU Zero Carbon Energy for the Asia Pacific**

Greenhouse gas emissions have increased with economic growth, and this relationship needs to be reset in order to limit climate change. Carbon dioxide from fossil fuel combustion is the largest source of greenhouse gas emissions, but some other sources matter as well. Significant reductions in emissions could be achieved at moderate cost if cost effective policies were implemented, but the politics of implementation and adjustment remain difficult. Nevertheless, the lower cost of clean technologies bodes well for future climate change mitigation policy success.

At the completion of this lecture you will understand trends and drivers in global and national emissions, building blocks of decarbonisation of the economy, economic costs and opportunities of reducing emissions, and policy approaches and experiences with the implementation of climate policies in Australia and other countries.

### 10.45am – Break (15 mins)

### 11.00am-12.15pm Enabling climate policy solutions

**Professor Stephen Bygrave, ANU Institute for Climate, Energy & Disaster Solutions**

This lecture will take a detailed look at Australian climate policy over the past 30 years, key policy actions taken at the federal level, as well as by state and territory governments. It will look at the major policies that have had an impact on greenhouse gas reductions, as well as the drivers and factors that have enabled various policies to be implemented.

At the completion of this lecture you will understand the history of climate policy in Australia, the role of the federal, state and territory governments in developing climate policy in Australia, and the drivers and factors that have enabled climate policies to be developed and implemented.

### 12.15-12.45pm Concluding participant remarks and closing

### END - DAY 3

*\* Program timings and lecture titles/abstracts are subject to change without notice, where necessary to deliver the course.*

