



EES1127H Applied Biogeochemistry and Geomicrobiology



aerosols. In addition, the types of climate modelling experiments performed with modern climate models and scenarios will be reviewed by focusing on the evidence for past and present climate change. The latest projections of future climate on a variety of temporal and spatial scales will also be presented and evaluated. This course is aimed at connecting the essentials of climate science and modelling, and training students to interpret the results of modelling experiments.

[EES1134 Climate Change Policy](#)

All policy is climate change policy. The challenges and solutions for climate change span across society and the economy, which means that addressing the climate crisis requires transformative change to both eliminate greenhouse gas emissions and adapt to the impacts of climate change. Global greenhouse gas emissions need to reduce rapidly in the next ten years and reach net zero around mid-century in order to have a chance of avoiding dangerous climate change. At the same time, climate change is exacerbating existing societal vulnerabilities and is having deep impacts across natural and social systems. This course focuses on the governance of the transformation necessary to address this crisis and covers theories behind and practical approaches to the multilevel governance of climate change. The course covers a range of public policy areas related to climate change mitigation and adaptation, including energy supply, energy use and demand, carbon markets and economic tools, food and agriculture, and transportation. In this course, students will learn about dealing with complexity in climate policy-making and the range of actors involved in climate change policy spanning multiple levels of government as well as non-state actors. The primary focus is on policy-making in Canada, but the course also incorporates international policy and global North case studies.

[EES1136H Climate Change Adaptation](#)

This graduate course will focus on adaptation science and practice at local, provincial, national and international scales. Students will learn about how climate change adaptation is perceived, studied and performed by civil society groups and governments through various theoretical perspectives: resilience theory, neo-liberal theory and critical theory. Students will also learn about different governance approaches that support adaptation: multi-level, poly-centric, experimental and anticipatory governance arrangements. Using case studies ranging from local adaptation planning in Canada to the IPCC's contributions to knowledge synthesis, students will gain a better understanding of the social, economic, political and ethical dilemmas at the core of adaptation science and practice. Combined lecture-seminar format.

[EES1137H Quantitative Applications for Data Analysis](#)

In this course data analysis techniques utilizing Python and R statistical language will be discussed and introduced, as well as the basics of programming and scientific computing. The goal of this course is to prepare graduate students to perform scientific data analysis. Students will learn how to use statistical inference tools to gain insight into large and small data sets, as well as be exposed to cutting-edge techniques and best practices to store, manage and analyze (large) data. Topics include: Python and R programming, version control, automation, modular program00912ary data. Topics



guiding principles which underlie environmental legislation and will cover the basic regulatory policies



Conservation and Biodiversity Program Directors

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	<p>Professor Stuart Livingstone Conservation & Biodiversity Program Director s.livingstone@utoronto.ca Website</p> <p>Research interests:</p> <ul style="list-style-type: none">Biological invasions (mechanisms, control)Ecosystem functioning & servicesFunctional ecologyProtected area connectivity