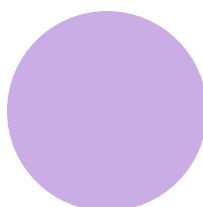


A multidisciplinary Approach to Climate Risk



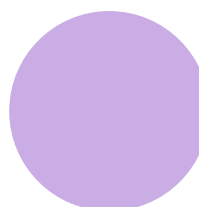
Fully Online

Courses are fully online and asynchronous, except for those in the Business and Climate Impact area, which are both synchronous and asynchronous.



Learn At Your Own Pace

Flexible, fully online courses allow you to customize your pace to fit your career and schedule.



Future Forward

Designed with the future in mind, this program prepares you to tackle emergent issues in climate impact and sustainability.

Now Accepting Applications for Fall 2024!

[Apply Now](#)[Ask Us Anything](#)

What is Climate Risk?

While sustainability addresses how to mitigate climate change using a reactive approach to what is already present, climate risk addresses the expected risks that are associated with the growing issue of climate change.

The knowledge of climate risks can be used proactively to help companies plan for expected risks that may impact their business or industry and help mitigate the issues climate change can cause. In government, climate risk assessment will assist in developing policies to support businesses, industries, and people in their efforts to mitigate the risks due to climate change and it's impact. Such skills enhancement requires the knowledge advancement aspect different from the traditional field of environment and sustainability.

The Western Advantage

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Changing climate. Changing demands.

Climate change is already having a significant effect on Canada and other parts of the world. Losses due to extreme weather (i.e., rain/flood, high wind, hail, wildland fire) having been growing at an alarming rate across the globe.

A recent study has projected that by the end of the century, the economic losses could be six times higher than previously estimated.

In another report published earlier this year by the Swiss Re Institute, it is predicted that with the current global warming trajectory, by 2050, the economic losses due to climate change could be up to 10% of the total global economic value.

The changing climate, including increased frequency and intensity of extreme weather events and the creeping changes in climate parameters, forces consideration of potential changes over the long service life of assets and resources.

Your Career Path Awaits

- Climatologist
- Environmental Risk Assessor
- Policy Advisor
- Urban and Regional Planner
- Eco-tourist Researcher
- Landscape Restoration Ecologist
- Environmental Data Analyst
- Environmental Scientist
- Environmental Emergency Planner
- Urban Planner
- Environmental Science and Protection Technicians
- Wildlife Conservationist
- Ecologist



Fast Facts

Details

- 1 Mandatory Course Online
- 3 Topic Specific Course Online

Key Dates

- Start Date - Mar 1, 2024
- Application Deadline - Mar 24, 2024

Tuition Fees

- Domestic Students - \$5000 +fees
- International Students - \$7500 +fees

Get Started Today

Step

1

Browse the website to see what specialization would be the best fit for you.

[Explore The Program](#)

Step

2

Reach out to our admissions professionals to get more information on the program.

[Ask Us Anything](#)

Step

3

Review the requirements you'll need to qualify and apply online.

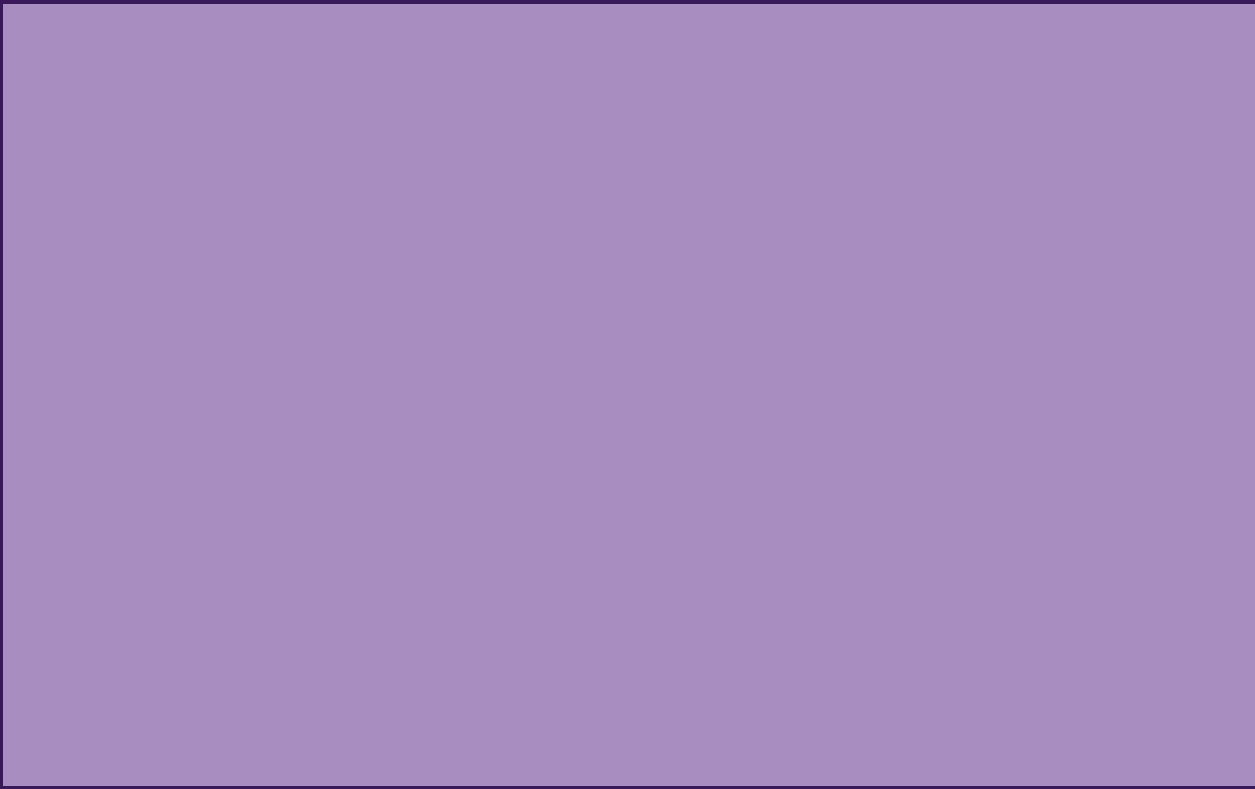
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The Program
Specializations
How To Apply
Get More Info

Privacy
Web Standards
Terms of Use
Accessibility





The Program



Climate Risk Assessment and Opportunity Graduate Diploma Program

The Graduate Diploma in Climate Risk Assessment and Opportunity is structured to emphasize multidisciplinary learning, inter-professional education, societal and environmental impact and life-long learning. This Diploma is offered online as part-time studies. Learners at all career stages are encouraged to participate in this program which promotes a proactive approach to climate change and will train individuals to better asses the associated risks and develop solutions to mitigate the impact of this global issue.

Program Structure

Students are required to successfully complete a total of four courses to earn a Graduate Diploma in Climate Risk Assessment and Opportunity. In addition to the mandatory common course, students are required to take 3 courses from within their chosen Area of Specialization.

1 mandatory online course

Multidiciplinary Aspects of Climate Risk (CLMTRISK 9001)

This course will tackle an interdisciplinary approach to climate risk. It will focus on the breadth of climate risk in relation to Engineering, Science, Social Science, and Business, and how these fields work together to tackle the larger problem of climate risk and climate change. By the end of the course, students should be able to understand the complexity of climate risk, including the importance of an interdisciplinary approach to tackle climate risk issue

3 topic specific online courses

From a chosen area of specialization

Areas of Specialization

- Business and Climate Impact (Ivey Business School)
- Climate Risk and Infrastructure Resiliency (Engineering)
- Climate Risk and Financial Modelling (Science)
- Climate Change Governance (Social Science)

Questions? Ask Us!

Western University operates on a three term system:

Fall

September

Winter

January

Summer

May

Selected courses are offered each term, and run the full length of the term. All courses are offered fully online. All courses are asynchronous, with the exception of courses offered in the Business and Climate Impact (Ivey Business School) area of specialization.

Requirements for the Graduate Diploma in Climate Risk Assessment and Opportunity can be fulfilled in:

4 Semesters (16 months)

One course each semester

6 Semesters (24 months)

Two courses each year

All four courses must be completed within a three-year period.

Critical Climate Skills

Upon successful completion of the Graduate Diploma in Climate Risk Assessment and Opportunity, learners will be able to:

Recognize

the value of a multidisciplinary approach to find solutions to diverse, complex problems, like climate change and associated risks

Critically evaluate

scholarly and popular literature in climate risk to formulate and defend evidence-based arguments in creative and engaging formats

Communicate

climate risks and ways to mitigate and adapt to these risks in oral and written forms to diverse audiences

Explain

the diverse modelling tools that allow us to assess risks and opportunities related to climate change across disciplines

Develop

a critical awareness of current problems related to climate risk and assess potential solutions.

Take The Next Step

[Explore Specializations](#)

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Specializations

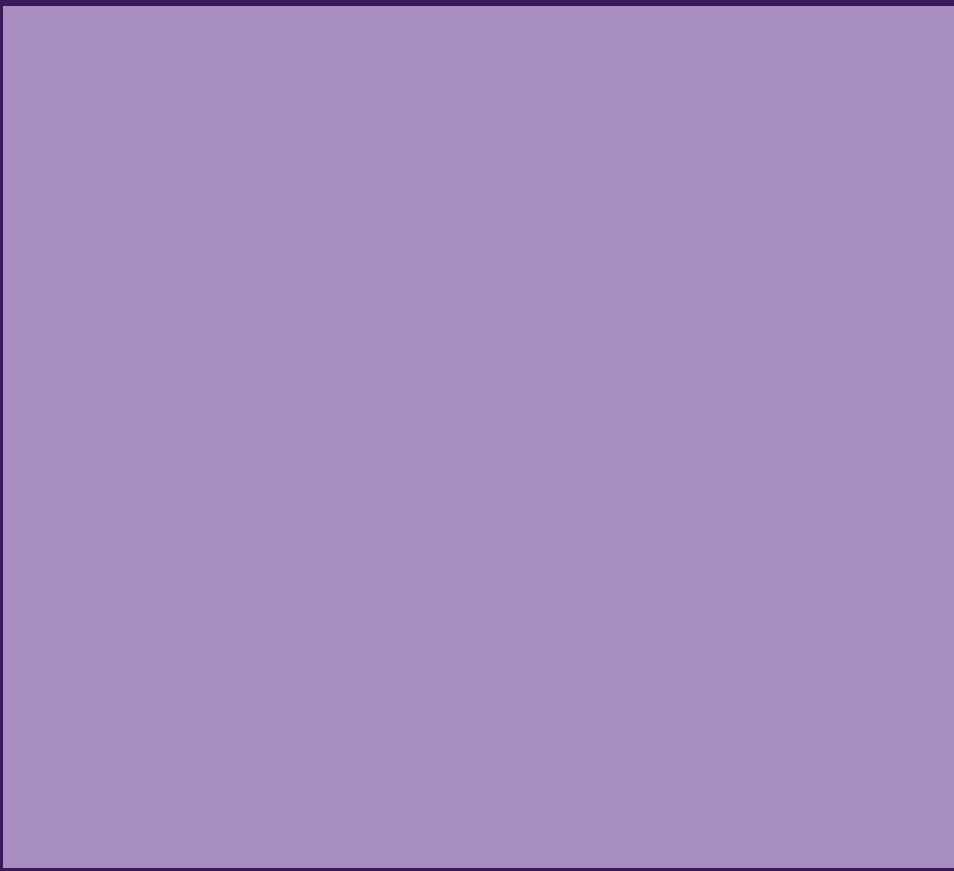
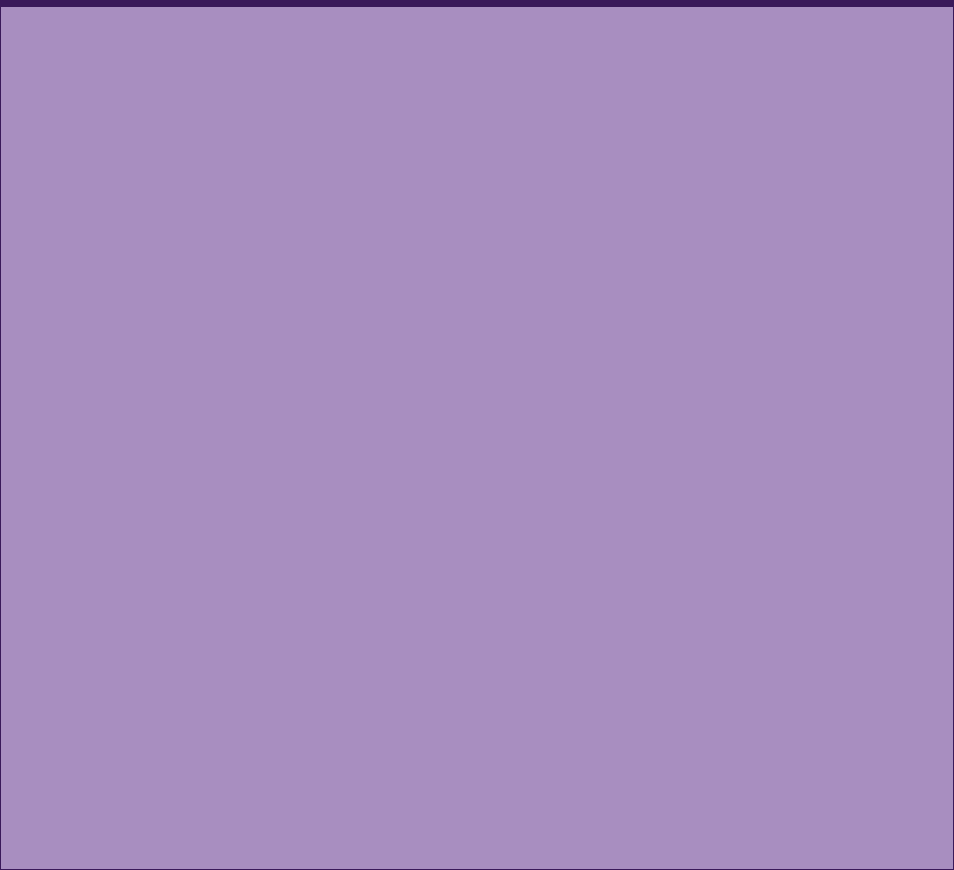
Areas of Specialization

The Graduate Diploma in Climate Risk Assessment and Opportunity offers 4 Areas of Specialization for students to choose from. In addition to the mandatory common course, students are required to take 3 courses from within their chosen Area of Specialization.

Business and Climate Impact (Ivey Business School)

The Business and Climate Impact concentration equips working professionals in a wide range of sectors with decision-making frameworks and tools to identify, assess and mitigate risks in a business context. Just as important, this concentration prepares professionals to explore and shape business opportunities to make a purposeful and strategic contributions to solving one of the most pressing issues facing business and society.

[Explore Ivey Business School](#)



Climate Risk and Infrastructure Resiliency (Engineering)

The overall purpose of this concentration is to introduce engineers to methods to conduct climate risk assessments for infrastructure and building design. The courses in this area cover (i) basic concepts in climate change and climate hazard, (ii) methods for conducting climate and extreme weather risk assessments, and (iii) a project to implement and learn these tools, develop an understanding of uncertainty, and communicating climate risk assessments to various groups.

[Explore Engineering](#)

Climate Risk and Financial Modelling (Science)

he specialization of Climate Risk and Financial Modelling addresses sustainability and the environment through the understanding of environmental systems using integrated scientific knowledge. Learners will be able to critically assess complex environmental systems that are constantly evolving and subject to the influence of climate change. Natural hazards and sustainable exploration are key components of this interdisciplinary graduate diploma. In addition, learners will build on their ability to define and describe scientific information including Environmetrics, financial management, and quantitative modeling of climate risks and natural disasters to tackle critical environmental and sustainability challenges facing our evolving planet.

[Explore Science](#)



Climate Change Governance (Social Science)

Climate risk governance occurs at multiple levels of government and includes private sector and civil society organizations. Acute impacts of climate change and severe weather will be particularly intense in urban environments placing municipalities in a pivotal role for adaptation strategies. Municipal governments can be central agents of positive change for both carbon reduction and justice.

[Explore Scoial Science](#)

Next Steps

[Explore Specializations](#)

[Ask Us Anything](#)

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Specialization

Business and Climate Impact (Ivey Business School)

Coming in Fall 2024, this area of specialization equips working professionals in a wide range of sectors with decision-making frameworks and tools to identify, assess and mitigate risks in a business context.

This specialization prepares professionals to explore and shape business opportunities to make a purposeful and strategic contributions to solving one of the most pressing issues facing business and society.

Learning Outcomes

After completing the Graduate Diploma in Climate Risk Assessment and Opportunity specializing in the area of Business and Climate Impact, students will be able to;

Explain

how climate change fits within the wider set of Environmental, Social, and Governance (ESG) factors that drive an organization's risks and opportunities with respect to sustainability.

Distinguish

key climate reporting and climate disclosure frameworks for business investors and external stakeholders.

Describe

key climate reporting and climate disclosure frameworks for business investors and external stakeholders.

Calculate

the broad climate and societal impacts of an organization by leveraging established measurement frameworks.

Develop

a robust climate transition plan, informed by climate risks, opportunities, and viable operational alternatives that deliver desirable economic and societal outcomes.

Recommended Background

Undergraduate business degree or have previously taken a pre-Ivey business skills course

Area of Specialization Courses

Business and Climate Risk (Ivey Business School)
In addition to the mandatory course, students are required to take 3 courses from within the Area of Specialization of their choice.

Course Offerings



Embedding Climate Strategies in Business

Delivery model - synchronous and asynchronous

Competitive advantage can be rooted in new capabilities related to net-zero, and other aspects of the environmental and social bottom lines. Taking the perspective of general managers, we will confront difficult challenges, scientific uncertainty, and new opportunities. Overall, the course is designed to deepen your understanding of value creation, value delivery and value capture that are central to business strategy; to map a number of the complex and evolving interactions between business and society along the supply chain; and to delve into promising sources of improved competitiveness.



ESG In-Action

Delivery model - synchronous and asynchronous

Climate risk is a financial risk. While there is variability in the degree to which climate risk presents in the economic fundamentals of corporations, climate risk is so pervasive and endemic a risk, that no corporation can avoid it. With the realization that climate change threatens the long-term viability of corporations, large institutional investors and asset managers – organizations and institutions that control a large percentage of the world's biggest businesses – have mobilized in recent years. The pressure that these institutions exert on boards of directors and the corporate governance ecosystem more broadly, is critically important to effecting change in the strategic direction of corporations.



Finance for Climate

Delivery model - synchronous and asynchronous

In Canada (and globally), innovative financial instruments offer exciting potential to help build thriving and healthy ecosystems and communities. When successful, such investment vehicles enable investors to:

- Generate profits.
- Address societal challenges.
- Strengthen collective governance through multi-stakeholder partnerships; and,
- Ensure a more efficient public and private money use by sharing risks and implementing specific incentive and measurement systems.

Next Steps

More About The Program

Ask Us Anything

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Specialization


Climate Risk and Infrastructure Resiliency (Engineering)

The overall purpose of this specialization is to introduce engineers to methods to conduct climate risk assessments for infrastructure and building design.


The courses in this area cover (i) basic concepts in climate change and climate hazard, (ii) methods for conducting climate and extreme weather risk assessments, and (iii) a project to implement and learn these tools, develop an understanding of uncertainty, and communicating climate risk assessments to various groups.

Learning Outcomes


After completing the Graduate Diploma in Climate Risk Assessment and Opportunity specializing in the area of Climate Risk and Infrastructure Resiliency, students will be able to;




Identify
climate-related risks to buildings and systems involved in infrastructure stability



Analyze
climate-related extremes and hazards data using state-of-the-art methods



Conduct
a climate risk assessment for a building and/or infrastructure systems



Identify
approaches to adapt to risks faced by buildings and infrastructure systems due to climate change

Recommended Background

Undergraduate degree in Engineering or equivalent work experience

Area of Specialization Courses

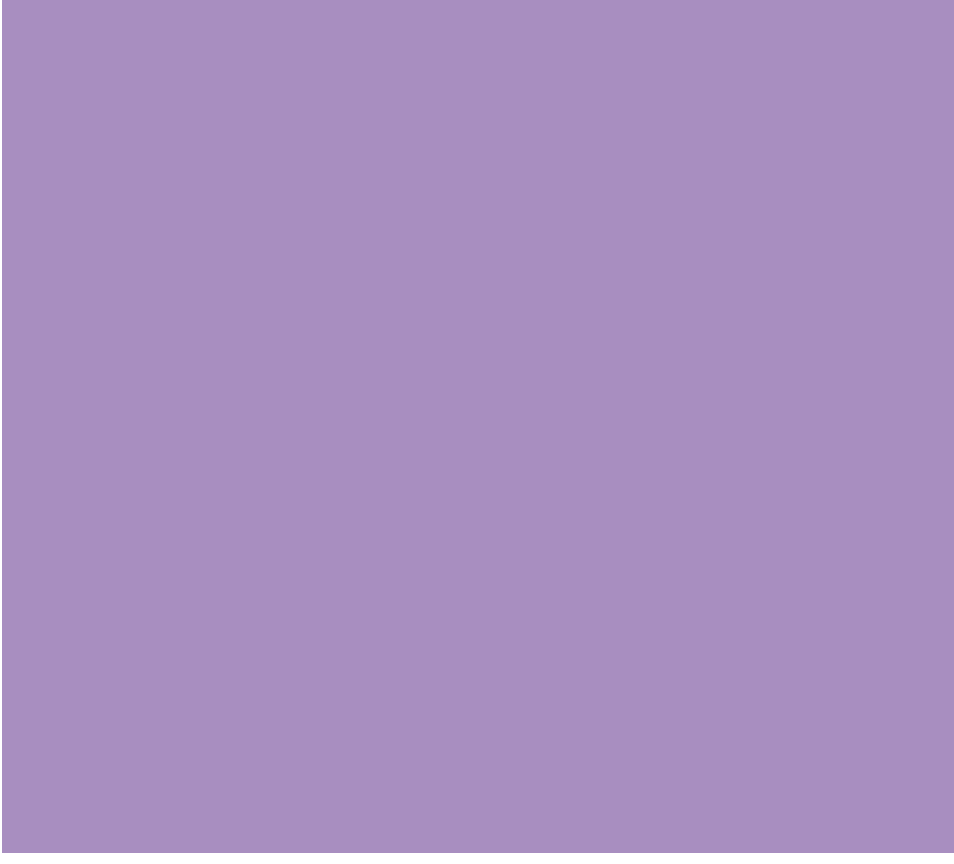
Climate Risk and Infrastructure Resiliency (Faculty of Engineering)
In addition to the mandatory course, students are required to take 3 courses from within the Area of Specialization of their choice.

Course Offerings



Climate Hazards for Engineers (CRENG 9002)

The purpose of this course is to introduce engineers to basic concepts in climate change and climate hazards such that they can perform basic analyses for climate risk assessments. By the end of the course, the student should be able to calculate and map the probability of occurrence of various climate hazard extremes, understand how these hazards produce risk through their interactions with the built environment, and understand the uncertainty associated with the estimates, including the importance of interdisciplinary collaboration in risk assessment and climate change adaptation. Students should be capable of assessing data sets to determine if the data is appropriate for a given risk assessment application (e.g., understanding hourly wind values as a design basis is flawed and why, such as load duration, difference between storm types, etc.).



Climate Risk Assessment of Infrastructure Systems (CRENG 9003)

The purpose of this course is to introduce engineers to the basic methods for conducting climate and extreme weather risk assessments as applied to infrastructure systems. By the end of the course, the student should be able to calculate and map the risk and vulnerability of climate hazards to infrastructure systems following various frameworks, including the PIEVC method, as well as emerging international frameworks. Students will understand the strengths and weaknesses of various approaches and will learn how to tailor risk assessments to the needs of each assessment.



Applied Climate Risk Assessment (CRENG 9004)

The purpose of this course is for the student to conduct a climate risk assessment, present it to multi-disciplinary audiences, and develop an understanding of uncertainty. The students will work in small teams to conduct an analysis of their choosing. There will be a small set of lectures where (i) outside experts present examples of climate risk analyses from around the world, and (ii) practical issues around data usage (e.g., gaps, reliability) and application are discussed. Students will present their projects to the class.

Next Steps

More About The Program

Ask Us Anything

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Specialization

Climate Risk and
Financial Modeling (Science)

This area of specialization addresses sustainability and the environment through the understanding of environmental systems using integrated scientific knowledge.

Learners will be able to critically assess complex environmental systems that are constantly evolving and subject to the influence of climate change. Natural hazards and sustainable exploration are key components of this interdisciplinary graduate diploma. In addition, learners will build on their ability to define and describe scientific information including Environmetrics, financial management, and quantitative modeling of climate risks and natural disasters to tackle critical environmental and sustainability challenges facing our evolving planet.

Learning Outcomes

After completing the Graduate Diploma in Climate Risk Assessment and Opportunity concentrating in the area of Climate Risk and Financial Modelling, students will be able to:

Evaluate

climate-environmental hazards and explain their risks to people, buildings, and infrastructure

Analyze

climate-environmental hazard data using modern data science and statistical approaches

Evaluate

and synthesize the quality of information on climate-environmental hazards

Develop

a workable plan for risk mitigation and management with a socio-economic impact of the proposed actions

Understand

the quantitative methods for identifying past climate change and construct and evaluate models that predict future climate change scenarios

Recommended Background

- Undergraduate degree in a science discipline
- Basic financial and statistical knowledge
- A working knowledge of programming languages (Python, R, C, C++, R, or Matlab, etc.).

Area of Specialization Courses

Climate Change and Financial Modelling (Faculty of Science)
In addition to the mandatory course, students are required to take 3 courses from within the Area of Specialization of their choice.

Course Offerings



Understanding Climate and Climate Change (CRSCI 9007)

This course provides an overview of the science of climate and the study of climate change. Changes in climate will affect all sectors of society (e.g., economy, health, agriculture). However, to understand these impacts we need to understand the science behind these changes. This course will examine the tools scientists use to identify natural fluctuations in climate through geological time and the models that are used to predict future changes.



Financial Climate Risk Management (CRSCI 9006)

In this course, the techniques necessary to implement the recommendations made by the national and international organizations, such as the International Panel on Climate Change of the UN, the Office of the Superintendent of Financial Institutions of Canada, the Basel Committee on Banking Supervision regarding the management of climate-related financial risks. This course will collate and integrate the vision of these organizations focusing not only on Financial Institutions, but also on any organization concerned with the impact of climate change (physical risks) and the transition to a low-carbon economy (transitional risks) in their operations, from a financial point of view.



Impact Forecasting and Management of Natural Catastrophes and Climate Risks (CRSCI 9005)

Natural hazards and disaster risk reduction are important and fast-evolving areas of research and practice in Canada and globally. It is an interdisciplinary field that cuts across natural sciences (e.g., meteorology, climatology, geophysics, geology, and hydrology), applied sciences (e.g., structural and infrastructure engineering), data sciences (e.g., statistics and GIS spatial data analysis), and risk financing/management (e.g., insurance and reinsurance). The four key elements of natural hazard and climate risks are integrated to quantify the risks of natural disasters to urban environments and exposed population. Students will learn practical skills of environmental data analysis and qualitative as well as quantitative assessments of natural hazards and climate risks, and will conduct practical exercises of developing natural hazard risk mitigation plans.

Next Steps

More About The Program

Ask Us Anything

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Specialization

Climate Change and Governance (Social Science)

Climate risk governance occurs at multiple levels of government and includes private sector and civil society organizations.

Acute impacts of climate change and severe weather will be particularly intense in urban environments placing municipalities in a pivotal role for adaptation strategies. Municipal governments can be central agents of positive change for both carbon reduction and justice

Learning Outcomes

After completing the Graduate Diploma in Climate Risk Assessment and Opportunity concentrating in the area of Climate Change and Governance, students will be able to;

Assess

societal causes, impacts and injustices of extreme weather and climate rise

Explain

the possibilities for mitigating the spatial and social inequalities of climate risk

Describe

the challenges associated with climate risk and energy transition communication

Assess

the variety of governance strategies for managing energy transitions and climate risk

Create

policy briefs and other climate risk-related communications to both technical and non-technical audience

Recommended Background

Undergraduate business degree or have previously taken a pre-lvey business skills course

Area of Specialization Courses

Climate Change Governance (Faculty of Social Science)

In addition to the mandatory course, students are required to take 3 courses from within the Area of Specialization of their choice.

Course Offerings

Climate Risks and Energy Transition (CRSOSCI 9010)

One of the cornerstones of global greenhouse gas reduction is the transition of energy systems to more efficient, lower carbon, forms. The course will focus on both the supply of energy (i.e., renewable sources) and the demand (e.g., heating, transportation) for energy from a range of stakeholders including governments, the private sector, various publics including Indigenous communities, and individual households. A core objective of the course is to recognize that while the science continues to evolve (e.g., energy storage) several actions can be enacted now. Thus, we will engage both behavioural and critical approaches to highlight how efforts to effect change at the individual level are bound up in potentially antiquated organizational models and thinking. Students will be introduced to the concepts and frameworks that encourage e.g., more efficient organization of electricity grids (smart grids, distributed grids) along with the various political, social, and cultural challenges for to their adoption. Energy justice will be a guiding conceptual principle for understanding these energy transitions.

Governance and Climate Risk (CRSOSCI 9009)

Climate risk governance is multi-scalar and includes broad stakeholders like the private sector and civil society organizations. Acute impacts of climate change and severe weather will be particularly intense in urban environments placing municipalities in a pivotal role for adaptation strategies. They along with federal and provincial governments, can also be central agents of positive change for carbon reduction. The course will involve developing an understanding power and limitations of all levels to effect change. Students will learn about the governance as it directly relates to severe weather, energy use, and carbon reduction policies and concepts like adaptation and resilience. They will explore the role of federal carbon reduction targets and the central importance of official/master plans for municipal governance and the relatively recent rise of ancillary planning like community energy plans and climate adaptation plans. They will learn practical skills such as synthesizing literature and generating policy briefs. The course will help develop an understanding of how climate risk is not something that is governed in a single “department”, but crosscuts vertically within formal governments and horizontally across a wide array of stakeholders.be a guiding conceptual principle for understanding these energy transitions.

Climate Risk and Jusice (CRSOSCI 9008)

This course provides an overview of key social scientific approaches to understanding climate risk and adaptation. A central theme of the course is the spatial, historical, and social unevenness of both the causes and impacts of climate change as well as efforts to mitigate harms from impacts like extreme climate and weather events (e.g., Indigenous communities). One overarching framework is the political economy of the Anthropocene, and a politics that can mitigate against ineffectual concessions while taking lead roles on real, positive change. Students will analyze disaster data along with case-studies of key climate impacts. Other themes include the challenge of changing cultural practices, ways of life, and patterns of behaviour. Students will be asked to explore the opportunities for, and challenges involved in, deploying climate mitigation and adaptation strategies that involve fundamental individual and societal changes to historical ways of life and being. Thus, the course underscores the multiple rationalities, beyond scientific ones, that are embedded in climate change minimization and impact mitigation strategies.

Next Steps

More About The Program

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How To Apply



Admission Requirements

Applicants must possess a four-year bachelor’s degree or equivalent from an accredited university. The School of Graduate and Postdoctoral Studies requires at least a 70% average (North American equivalent) across courses taken in the last two full-time years of the latest degree. Equivalent qualifications may be considered based on the standards of the discipline or profession. For example, industry experience or field work experience would be an alternative qualification as we are targeting working professionals for this program. The qualifications listed below are options for equivalent qualifications that will be accepted for this Graduate Program in each of the Areas of Specialization

Education Qualifications

1

4-Year Bachelor’s Degree in Area of Specialization

OR

2

3-Year Bachelor’s Degree in Area of Specialization + 2 years of relevant work experience

OR

3

College Diploma in Area of Specialization + 3 years of relevant work experience (For Social Science and Business ONLY)

For learners who require the relevant work experience, a signed letter from their employer stating the company name, learner’s current/ relevant role, and years of service in current/ relevant role, need to be included in the admissions documentation. Alternative documentation that showcases relevant work experience can be submitted to the admissions committee for approval into the program. These materials will be reviewed by the admissions committee.

Apply Now

Tuition & Fees

Domestic Students

\$5000 per course + ancillary fees.

International Students

\$7500 per course + ancillary fees.

Only 4 courses required to obtain the Graduate Diploma in Climate Risk Assessment and Opportunity

English Language Proficiency

Applicants whose first language is not English must furnish evidence of their proficiency by a satisfactory* achievement within the last two years. Expand to see the full list of approved English language testing agencies and their requirements.

Close ▲

Test of English as a Foreign Language (TOEFL)

The minimum acceptable score is 86, with no individual score below 20 for the internet based version; 213 for the standard electronic version; or 550 for the paper and pencil version, although some programs require a higher minimum score. [Western's TOEFL ID is 0984].

The Duolingo English Test

The minimum acceptable score is 115.

International English Language Testing Service (IELTS)

The minimum acceptable score is 6.5 out of 9. The IELTS is offered in 6 test centres in the US and 3 in Canada.

Michigan English Language Assessment Battery (MELAB)

Students must have at least 80 on each of the sections and an overall score of at least 85. Arrangements to write MELAB may be made online.

Canadian Academic English Language Assessment (CAEL Assessment)

The minimum acceptable score is 60. The CAEL Assessment is offered in several countries throughout the world as well as Canada.

Fanshawe College’s ESL Program.

The requirement is graduation from Level 5, Advanced Academic Preparation, with a minimum 80% in all components

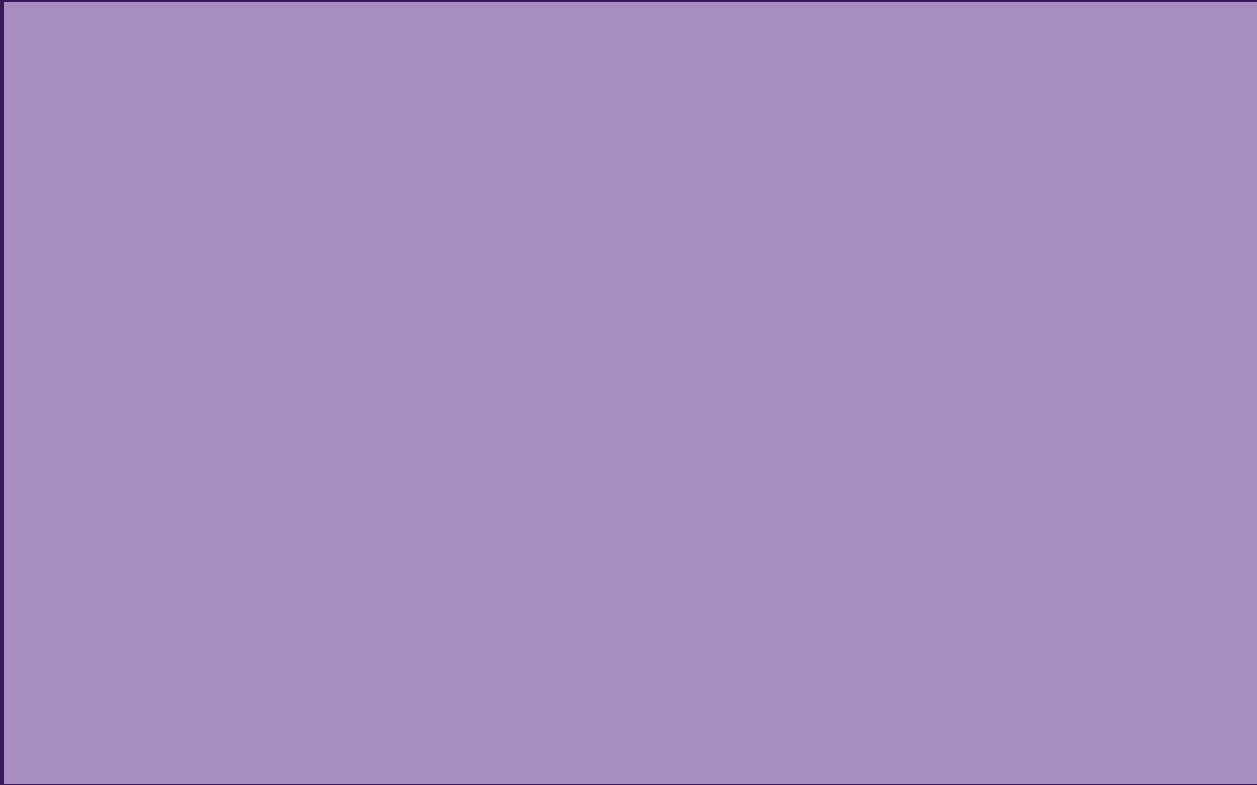
Please note: Students who are required to present evidence of proficiency in English must make their own arrangements to write the TOEFL, Duolingo, IELTS, MELAB or CAEL and to have the official results sent directly to the School of Graduate and Postdoctoral Studies by the testing agency. Those graduates from Level 5 of the Fanshawe College ESL Program must provide official proof of graduation. Please contact gradapps@uwo.ca with any questions regarding English Language Proficiency requirements.

Next Steps

More About The Program

Ask Us Anything

Apply Now



Get More Info



Have Questions?

Are you interested in learning more about the new Graduate Diploma in Climate Risk Assessment and Opportunity? Contact us using the form or by emailing climaterisk@uwo.ca. We look forward to answering your questions.

Ask Us Anything

First Name*

Last Name*

Email Address*

City*

Country*

Select▼

Specialization*

Select▼

Ask Us Anything*

Your Question/Comment

Submit

*Required Fields

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