



## UNSW Course Outline

# RISK5005 Climate Change and Business Risk Management - 2024

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## General Course Information

**Course Code :** RISK5005

**Year :** 2024

**Term :** Term 2

**Teaching Period :** T2

**Is a multi-term course? :** No

**Faculty :** UNSW Business School

**Academic Unit :** School of Risk and Actuarial Studies

**Delivery Mode :** In Person

**Delivery Format :** Standard

**Delivery Location :** Kensington

**Campus :** Sydney

**Study Level :** Postgraduate

**Units of Credit :** 6

### Useful Links

[Handbook Class Timetable](#)

## Course Details & Outcomes

### Course Description

This course introduces techniques and methods for analysing climate change risk affecting various organisations. The course touches on a variety of risks likely to emerge due to climate change, such as physical, legal, transitional, and financial risks. Scenarios for transitioning

towards a net zero economy as well as getting a better understanding of existing international guidelines and frameworks to strengthen resilience against the downfalls of climate change will also be introduced.

## Course Aims

*The aim of this course is to provide students with a comprehensive understanding of the emerging risks posed by climate change to both public and private organisations. Through a high-level exploration of climate science, climate data, risk modelling methodologies, and practical applications across various sectors such as insurance, finance, and enterprise management, participants will develop the necessary skills to identify, assess, respond, and mitigate climate-related risks in their professional domains.*

## Relationship to Other Courses

This course aims to introduce students to the complex and diverse range of climate risks that individuals and organisations must manage in today's fast-changing global environment, as well as the fundamental principles, frameworks, and practices of climate risk management.

# Course Learning Outcomes

Course Learning Outcomes	Program learning outcomes
CLO1 : Apply adequate techniques and methods for analysing climate change and climate risks affecting various organisations.	<ul style="list-style-type: none"><li>PLO1 : Business Knowledge</li><li>PLO2 : Problem Solving</li><li>PLO3 : Business Communication</li><li>PLO4 : Teamwork</li></ul>
CLO2 : Describe different types of risks associated with climate change.	<ul style="list-style-type: none"><li>PLO1 : Business Knowledge</li><li>PLO2 : Problem Solving</li><li>PLO3 : Business Communication</li><li>PLO5 : Responsible Business Practice</li></ul>
CLO3 : Outline effective strategies for transitioning towards a net zero economy.	<ul style="list-style-type: none"><li>PLO1 : Business Knowledge</li><li>PLO3 : Business Communication</li><li>PLO4 : Teamwork</li></ul>

Course Learning Outcomes	Assessment Item
CLO1 : Apply adequate techniques and methods for analysing climate change and climate risks affecting various organisations.	<ul style="list-style-type: none"><li>Assignment</li><li>Final exam</li><li>Group Project</li><li>Formative Activities</li></ul>
CLO2 : Describe different types of risks associated with climate change.	<ul style="list-style-type: none"><li>Assignment</li><li>Final exam</li><li>Group Project</li><li>Formative Activities</li></ul>
CLO3 : Outline effective strategies for transitioning towards a net zero economy.	<ul style="list-style-type: none"><li>Assignment</li><li>Final exam</li><li>Group Project</li><li>Formative Activities</li></ul>

## Learning and Teaching Technologies

Moodle - Learning Management System

## Additional Course Information

The philosophy underpinning this course and its Teaching and Learning Strategies are based on Guidelines on Learning that Inform Teaching at UNSW. Specifically, the lectures and assessments have been designed to appropriately challenge students and support the achievement of the desired learning outcomes.

The broad approach to learning and teaching in the course is to combine institutional knowledge, theoretical analysis, and practical examples. With appropriate guidance, students are

encouraged to take responsibility for their own learning through a combination of:

Review of course material, lecture slides, the lectures/lecture recordings, and suggested readings;

Interactive discussion of issues with the course coordinator;

Class discussions (face-to-face or via online discussion forums);

Student presentations;

Feedback through exercises, class participation, and comments on class discussions.

This approach equips students to be able to develop the necessary analytical and communication skills to assess new problems encountered, rather than rote learning of particular problems, which are unlikely to be met in precisely the same format in practice. Given the ever evolving nature of the discipline, no specific textbook is recommended. Will be expected to have reviewed relevant suggested readings including, scientific articles, industry reports, and government publications.

## Assessments

### Assessment Structure

Assessment Item	Weight	Relevant Dates	Program learning outcomes
Assignment Assessment Format: Individual	25%	Start Date: Not Applicable Due Date: Week 9: 22 July - 28 July	<ul style="list-style-type: none"><li>• PLO1 : Business Knowledge</li><li>• PLO2 : Problem Solving</li><li>• PLO3 : Business Communication</li></ul>
Final exam Assessment Format: Individual	30%	Start Date: Not Applicable Due Date: Not Applicable	<ul style="list-style-type: none"><li>• PLO1 : Business Knowledge</li><li>• PLO2 : Problem Solving</li><li>• PLO3 : Business Communication</li></ul>
Group Project Assessment Format: Group	30%	Start Date: Not Applicable Due Date: Week 3: 10 June - 16 June, Week 4: 17 June - 23 June, Week 7: 08 July - 14 July	<ul style="list-style-type: none"><li>• PLO1 : Business Knowledge</li><li>• PLO3 : Business Communication</li><li>• PLO4 : Teamwork</li><li>• PLO2 : Problem Solving</li></ul>
Formative Activities Assessment Format: Individual	15%	Start Date: Not Applicable Due Date: Week 3: 10 June - 16 June, Week 4: 17 June - 23 June, Week 7: 08 July - 14 July	<ul style="list-style-type: none"><li>• PLO3 : Business Communication</li><li>• PLO1 : Business Knowledge</li><li>• PLO7 : Leadership Development</li></ul>

# **Assessment Details**

## **Assignment**

### **Course Learning Outcomes**

- CLO1 : Apply adequate techniques and methods for analysing climate change and climate risks affecting various organisations.
- CLO2 : Describe different types of risks associated with climate change.
- CLO3 : Outline effective strategies for transitioning towards a net zero economy.

### **Detailed Assessment Description**

The individual assignment offers students the possibility to develop their own critical thinking and apply concepts discussed in class. It builds upon the group project and the formative assessments. Please refer to Moodle course website for more information.

### **Assignment submission Turnitin type**

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

## **Final exam**

### **Course Learning Outcomes**

- CLO1 : Apply adequate techniques and methods for analysing climate change and climate risks affecting various organisations.
- CLO2 : Describe different types of risks associated with climate change.
- CLO3 : Outline effective strategies for transitioning towards a net zero economy.

### **Detailed Assessment Description**

The purpose of the Final Exam is to assess your understanding of all material presented in the course, including lectures and the exercises and questions covered in tutorials. The Final Exam will be held during the University examination period and will be 2 hours. The Final Exam will cover the entire course. Please refer to Moodle course website for more information.

### **Assignment submission Turnitin type**

Not Applicable

## **Group Project**

### **Course Learning Outcomes**

- CLO1 : Apply adequate techniques and methods for analysing climate change and climate risks affecting various organisations.
- CLO2 : Describe different types of risks associated with climate change.
- CLO3 : Outline effective strategies for transitioning towards a net zero economy.

### Detailed Assessment Description

The purpose of the group project is to empower students with the necessary multidisciplinary skills for understanding and responding to climate risk, from an enterprise standpoint. In the group project students collaborate within groups of 4 or 5, to develop a presentation on a specific climate risk of their choice. Students have multiple opportunities to present in class the various stages of their project, with a final presentation as well. In class presentations are scheduled for Week 3 and Week 4, with an optional practice run of presentation scheduled for Week 6. The final presentation will be during the lecture of Week 7. This assessment is linked to both the formative assessment and the individual assignment. Please refer to the Moodle course website for more information.

### Assignment submission Turnitin type

Not Applicable

## Formative Activities

### Course Learning Outcomes

- CLO1 : Apply adequate techniques and methods for analysing climate change and climate risks affecting various organisations.
- CLO2 : Describe different types of risks associated with climate change.
- CLO3 : Outline effective strategies for transitioning towards a net zero economy.

### Detailed Assessment Description

The formative activities are linked to both the Group Project and the Individual Assignment. Students will engage in discussions on their in class presentations, and elaborate on the feedback they receive from the course coordinator and their peers. These discussions will reinforce student learning and will help them in identifying areas they want to focus on in the Individual Assignment. Please refer to the Moodle course website for more information.

### Assignment submission Turnitin type

Not Applicable

## General Assessment Information

As a student at UNSW you are expected to display [academic integrity](#) in your work and interactions. Where a student breaches the [UNSW Student Code](#) with respect to academic integrity, the University may take disciplinary action under the Student Misconduct Procedure. To assure academic integrity, you may be required to demonstrate reasoning, research and the process of constructing work submitted for assessment.

To assist you in understanding what academic integrity means, and how to ensure that you do comply with the UNSW Student Code, it is strongly recommended that you complete the [Working with Academic Integrity](#) module before submitting your first assessment task. It is a free, online self-paced Moodle module that should take about one hour to complete.

### **Grading Basis**

Standard

### **Requirements to pass course**

In order to pass this course, you must:

- achieve a composite mark of at least 50 out of 100;
- meet any additional requirements described in the Assessment Summary section.

You are expected to attempt all assessment requirements in the course.

# Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 27 May - 2 June	Lecture	Introduction on climate, weather, and climate risk. This week introduces fundamental aspects of the course, such as climate, weather, climate change, and its impact on society and environment. This week will also introduce the overarching goal of the course which is how to integrate climate risk into the broader Enterprise Risk Management framework.
Week 2 : 3 June - 9 June	Lecture	Classification of Climate risks: Physical risk, Transmission risks (aka Identify the risk!). Week 2 aims at establishing the main types of climate risks: physical risks and transmission risks. The distinction between acute and chronic physical risks will also be discussed in class. Identifying climate risk it is the first step of the risk management process.
Week 3 : 10 June - 16 June	Lecture	Data on climate risk (aka Measuring the risk). Week 3 looks into the specificities of climate data, to provide a coherent overview without going too deeply into the technicalities reserved for climate scientists. This week provides a high level introduction to key features climate data, such as patterns over time and space, seasonality, compound effects, and large-scale circulations. Also, students will be provided with a brief discussion on extreme weather events. Understanding data and its features is a key component for measuring the risk. The first in class presentation is scheduled in this week.
Week 4 : 17 June - 23 June	Lecture	Modeling Climate risk (aka Measuring the risk, part 2). Week 4 serves as a high level introduction to climate risk modelling. A general overview of the most common approaches in climate risk modeling will be provided. Building up from week 3 content, a brief introduction to extreme value theory in the context of climate risk will be provided. The purpose of this week falls again into the measuring risk part of the risk management process. The second in class presentation is scheduled for this week.
Week 5 : 24 June - 30 June	Lecture	Mitigation and adaptation (aka Actionable plan for climate risk!). Week 5 starts introducing actionable plans for climate risk, which is the third main component of the risk management process. The focus is on risk mitigation and adaptation strategies, carbon tax and the cost of carbon, path to net zero, and climate risk and adaptation gap.
Week 6 : 1 July - 7 July	Other	Recharge week. No class, no lecture. During recharge week, students have the option to participate in a preliminary in-person round of presentations. This activity is optional and no marks are attached to attending.
Week 7 : 8 July - 14 July	Lecture	ESG and climate finance. Week 7 examines climate risk from the perspective of financial markets and focuses on Environmental, Social, and Governance (ESG) criteria. The final in class presentation is scheduled for this week.
Week 8 : 15 July - 21 July	Lecture	Actuarial perspective of climate risk (aka Measuring the risk part 3). Week 8 looks at the actuarial perspective on climate risk modeling. The aim of the week is to introduce three main actuarial climate indices.
Week 9 : 22 July - 28 July	Lecture	Climate risk management: insurance (aka Actionable plan part 2). Week 9 focuses on climate risk management from a risk transfer point of view.
Week 10 : 29 July - 4 August	Lecture	Enterprise Risk Management for climate Change (aka let's tie everything together). Week 10 brings all the different aspects we have seen in the course together and discusses how climate risk management should be incorporated into the broader enterprise risk management framework.

## Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

# General Schedule Information

## Lectures

The purpose of lectures is to provide a logical structure for the topics that make up the course and to emphasise the important or difficult concepts and methods of each topic. The material introduced in lectures is supplemented by designated readings. Lectures commence in Week 1.

# Course Resources

## Prescribed Resources

The website for this course is on [Moodle](#). The website includes: all course handouts; lecture slides; designated readings; the tutorial program and readings for Review Essays. To access the course website online support site for students, follow the links from that website to UNSW Moodle Support/Support for Students. Additional technical support can be obtained from [itservicecentre@unsw.edu.au](mailto:itservicecentre@unsw.edu.au) (02 9385 1333).

It is important that you visit the course website regularly to see any notices and documents posted there, as it will be assumed that they are known to you within a reasonable time.

## Textbook and Readings

There is no prescribed textbook for this course. All materials (e.g., required and recommended readings) are provided on the course website in Moodle.

# Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Lecturer	Matteo Malavasi					No	Yes

# Other Useful Information

## Academic Information

## COURSE POLICIES AND SUPPORT

The Business School expects that you are familiar with the contents of this course outline and

the UNSW and Business School learning expectations, rules, policies and support services as listed below:

- Program Learning Outcomes
- Academic Integrity and Plagiarism
- Student Responsibilities and Conduct
- Special Consideration
- Protocol for Viewing Final Exam Scripts
- Student Learning Support Services

Further information is provided on the [key policies and support page](#).

Students may not circulate or post online any course materials such as handouts, exams, syllabi or similar resources from their courses without the written permission of their instructor.

## STUDENT LEARNING OUTCOMES

The Course Learning Outcomes (CLOs) – under the Outcomes tab – are what you should be able to demonstrate by the end of this course, if you participate fully in learning activities and successfully complete the assessment items.

CLOs also contribute to your achievement of the Program Learning Outcomes (PLOs), which are developed across the duration of a program. PLOs are, in turn, directly linked to [UNSW graduate capabilities](#). More information on Coursework PLOs is available on the [key policies and support page](#). For PG Research PLOs, including MPDBS, please refer to the [UNSW HDR Learning Outcomes](#).

## Academic Honesty and Plagiarism

As a student at UNSW you are expected to display [academic integrity](#) in your work and interactions. Where a student breaches the [UNSW Student Code](#) with respect to academic integrity, the University may take disciplinary action under the Student Misconduct Procedure. To assure academic integrity, you may be required to demonstrate reasoning, research and the process of constructing work submitted for assessment.

To assist you in understanding what academic integrity means, and how to ensure that you do comply with the UNSW Student Code, it is strongly recommended that you complete the [Working with Academic Integrity](#) module before submitting your first assessment task. It is a free, online self-paced Moodle module that should take about one hour to complete.

# Submission of Assessment Tasks

## SPECIAL CONSIDERATION

You can apply for special consideration when illness or other circumstances beyond your control interfere with your performance in a specific assessment task or tasks, including online exams. Students studying remotely who have exams scheduled between 10pm and 7am local time, are also able to apply for special consideration to sit a supplementary exam at a time outside of these hours.

Special consideration is primarily intended to provide you with an extra opportunity to demonstrate the level of performance of which you are capable. To apply, and for further information, see Special Consideration on the UNSW [Current Students](#) page.

Special consideration applications will be assessed centrally by the Case Review Team, who will update the online application with the outcome and add any relevant comments. The change to the status of the application immediately sends an email to the student and to the assessor with the outcome of the application.

Please note the following:

1. Applications can only be made through Online Services in myUNSW (see the UNSW [Current Students](#) page). Applications will not be accepted by teaching staff. The lecturer-in-charge/course coordinator will be automatically notified when your application is processed.
2. Applying for special consideration does not automatically mean that you will be granted a supplementary exam or other concession.
3. If you experience illness or misadventure in the lead up to an exam or assessment, you must submit an application for special consideration, either prior to the examination taking place, or prior to the assessment submission deadline, except where illness or misadventure prevent you from doing so.
4. If your circumstances stop you from applying before your exam or assessment due date, you must apply within 3 working days of the assessment or the period covered by your supporting documentation.
5. Under the UNSW Fit To Sit/Submit rule, if you sit the exam/submit an assignment, you are declaring yourself well enough to do so and are cannot subsequently apply for special consideration.
6. If you become unwell on the day of – or during – an exam, you must stop working on your exam, advise your course coordinator or tutor and provide a medical certificate dated within 24 hours of the exam, with your special consideration application. For online exams, you must contact your course coordinator or tutor immediately via email, Moodle or chat and advise

them you are unwell and submit screenshots of your conversation along with your medical certificate and application.

## 7. Special consideration requests do not allow the awarding of additional marks to students.

Further information on Business School policy and procedure can be found under "Special Consideration" on the [key policies and support](#) page.

## LATE SUBMISSION PENALTIES

For assessments other than examinations, late submission will incur a penalty of 5% per day or part thereof (including weekends) from the due date and time. An assessment will not be accepted after 5 days (120 hours) of the original deadline unless special consideration has been approved. An assignment is considered late if the requested format, such as hard copy or electronic copy, has not been submitted on time or where the 'wrong' assignment has been submitted.

For assessments which account for 10% or less of the overall course grade, and where answers are immediately discussed or debriefed, the LIC may stipulate a different penalty. Details of such late penalties will be available on the course Moodle page.

## FEEDBACK ON YOUR ASSESSMENT TASK PERFORMANCE

Feedback on student performance from formative and summative assessment tasks will be provided to students in a timely manner. Assessment tasks completed within the teaching period of a course, other than a final assessment, will be assessed and students provided with feedback, with or without a provisional result, within 10 working days of submission, under normal circumstances. Feedback on continuous assessment tasks (e.g. laboratory and studio-based, workplace-based, weekly quizzes) will be provided prior to the midpoint of the course.

## Faculty-specific Information

### PROTOCOL FOR VIEWING FINAL EXAM SCRIPTS

UNSW students have the right to view their final exam scripts, subject to a small number of very specific exemptions. The UNSW Business School has set a [protocol](#) under which students may view their final exam script. Individual schools within the Faculty may also set up additional local processes for viewing final exam scripts, so it is important that you check with your School.

If you are completing courses from the following schools, please note the additional school-

specific information:

- Students in the **School of Accounting, Auditing & Taxation** who wish to view their final examination script should also refer to [this page](#).
- Students in the **School of Banking & Finance** should also refer to [this page](#).
- Students in the **School of Information Systems & Technology Management** should also refer to [this page](#).

## COURSE EVALUATION AND DEVELOPMENT

Feedback is regularly sought from students and continual improvements are made based on this feedback. At the end of this course, you will be asked to complete the [myExperience survey](#), which provides a key source of student evaluative feedback. Your input into this quality enhancement process is extremely valuable in assisting us to meet the needs of our students and provide an effective and enriching learning experience. The results of all surveys are carefully considered and do lead to action towards enhancing educational quality.

## QUALITY ASSURANCE

The Business School is actively monitoring student learning and quality of the student experience in all its programs. A random selection of completed assessment tasks may be used for quality assurance, such as to determine the extent to which program learning goals are being achieved. The information is required for accreditation purposes, and aggregated findings will be used to inform changes aimed at improving the quality of Business School programs. All material used for such processes will be treated as confidential.

## TEACHING TIMES AND LOCATIONS

Please note that teaching times and locations are subject to change. Students are strongly advised to refer to the [Class Timetable website](#) for the most up-to-date teaching times and locations.