

Climate and ESG Finance

Module 1, 2025

Course Information

Instructor: Yifei Zhang

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Office Hour: Friday 15:00 – 17:00 or by appointment

Course Type: Finance Elective (3 credits)

Classes:

Lecture time: Monday & Thursday 13:30 am -- 15:20pm

Venue: PHBS Building, Room to be assigned

Course Website:

All course materials will be uploaded on the PHBS course management system (cms.phbs.edu.cn)

1. Course Description

1.1 Overview

Course overview: The *Climate and ESG Finance* (hereafter *ESG Finance*) course is the first ESG-related course at PHBS. It aims to introduce students to the latest knowledge and insights regarding climate finance and ESG finance. Given that the corporate sector is the largest contributor to greenhouse gas emissions, corporate climate action has become a significant focus for investors who prioritize environmental, social, and governance (ESG) goals. Institutional investors and corporate executives now consider climate risk and opportunities when making investment and operational decisions. It is essential for PHBS master students to stay informed about climate finance and its applications in the Chinese financial markets to align with this global trend.

The course will begin by exploring the fundamentals of ESG investing. ESG investing involves using a set of standards to evaluate a company's behavior, which socially responsible investors employ to screen potential investments. The class will also pay an extra emphasis on climate innovation given my own research expertise.

It is widely assumed that new climate change mitigation technologies (CCMTs) will play a central role in the global transition to net zero greenhouse gas (GHG) emissions. In the influential scenarios of the International Energy Agency on transition paths to net zero by 2050, half of the reductions in 2050 will come from new technologies that are not used at scale currently (they exist only at the demonstration or prototype phase).

While there are no strict prerequisites for this course, having a solid foundation in Corporate Finance and Investments is strongly recommended. Additionally, some knowledge of statistics would be beneficial for better comprehension of the course materials (for example regression analysis).

By delving into climate finance, this course aims to equip students with the necessary understanding and skills to navigate and contribute to the evolving landscape of sustainable finance.

1.2 Textbooks and Reading Materials

Students are expected to read some papers and policy reports in the process of finishing my take-home exercises. These reading materials will be uploaded to CMS.

2. Details of the Course

2.1 Course Plan

Note: The schedule is subject to further changes if students request.

Week	Covered Topic
Week 1	Introduction to Climate Finance and Sustainable Finance Reading: UNCC E-learning Video and Reading Materials -- https://unccelearn.org/?redirect=0
Week 2	<u>Risk and Return in the World of ESG</u> Reading: (1) Berg, Florian, Julian F Koelbel, Anna Pavlova, and Roberto Rigobon, 2021, ESG Confusion and Stock Returns: Tackling the Problem of Noise, NBER Working Paper No. 30562 (2) Pastor, Lubos, Robert F. Stambaugh, and Lucian A. Taylor, 2022, Dissecting Green Returns, Journal of Financial Economics 146, 403-424. (3) Bolton, Patrick, and Marcin Kacperczyk, 2021, Global pricing of carbon-transition risk. No. 28510. National Bureau of Economic Research.

Week 3	<u>ESG and Institutional Investors</u> Reading: Gibson, R., Glossner, S., Krueger, P., Matos, P. and Steffen, T., 2020. Responsible institutional investing around the world (No. 20-13). Swiss Finance Institute.
Week 4	<u>Climate Innovation and Financial Markets</u> Reading: Ulrich Hege, Kai Li, and Yifei Zhang, Climate Innovation and Carbon Emissions: Evidence from the Supply Chain Networks, Western Finance Association 2024 Conference Paper
Week 5	Lesson 5: <u>ESG and Global Supply Chain</u> Reading: TBA
Week 6	<u>Green Bonds and Green Loan Market</u> Reading: TBA
Week 7	<u>ESG Applications in China</u>
Week 8	ESG Perspective on VC/PE investments / ESG Perspective on corporate AI (LLM) adoptions
Week 9	Student Presentations

2.2 Assessment/Grading Details

The course assessment will consist of four components, each contributing to the final grade:

1. Attendance: 10 percent of the overall grade will be based on regular attendance in class. Each absence will cost two points. More than 6 absences will automatically lead to Fail.
2. Participation and Bonus Points: 20 percent of the grade will be awarded for active participation in class discussions, asking, and answering questions.
3. Take Home Exercise: 40 percent of the final grade will be determined by a take-home exercise. This component will assess the students' understanding of the course material and their ability to apply concepts learned in practical scenarios. These are multiple choice questions.
4. Group Project and Presentation: 30 percent of the grade will be allocated to a group project and presentation. This collaborative effort will allow students to apply their knowledge and skills in a real-world context, fostering teamwork and presentation abilities.

It is worth noting that there will be no exams in this class. The assessment methods are designed to encourage active learning, critical thinking, and practical application of the course content.

2.3 Academic Honesty and Plagiarism

It is important for a student's effort and credit to be recognized through class assessment. Credits earned for a student work due to efforts done by others are clearly unfair. Deliberate dishonesty is considered academic misconducts, which include plagiarism; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; or altering, forging, or misusing a University academic record; or fabricating or falsifying of data, research procedures, or data analysis.

All assessments are subject to academic misconduct check. Misconduct check may include reproducing the assessment, providing a copy to another member of faculty, and/or communicate a copy of this assignment to the PHBS Discipline Committee. A suspected plagiarized document/assignment submitted to a plagiarism checking service may be kept in its database for future reference purpose.

Where violation is suspected, penalties will be implemented. The penalties for academic misconduct may include: deduction of honour points, a mark of zero on the assessment, a fail grade for the whole course, and reference of the matter to the Peking University Registrar.

AI tools requirements:

Using AI tools to complete assignments or assessments without the approval of the course instructor will be regarded as an act of academic dishonesty. Depending on the severity of the situation, penalties will be implemented in accordance with the provisions of the Peking University Graduate Student Handbook.

For more information of plagiarism, please refer to *PHBS Student Handbook*.

