MIDDLE EAST TECHNICAL UNIVERSITY **FALL 2025**
DEPARTMENT OF BUSINESS ADMINISTRATION

BA4150/5150 – CLIMATE ISSUES IN BUSINESS
FRIDAY 12.40 – 16.15

Instructor:	Dr. Cankut Kaan Bolat – Dr. Selin Özokcu
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Course Web Page	Link to ODTUClass Course Page

Course Description:

This course, designed for business school students, introduces the foundational elements of climate science, economics, and technology. The objective is to foster an interdisciplinary and informed understanding of the connections between the economy and the climate crisis, focusing on business implications and strategies. Students will learn to assess the strategic implications of climate change for businesses, including risk management, opportunity identification, and long-term planning.

Course Student Learning Objectives: (CSLOs)

Upon successful completion of this course, students should be able to:

Course Specific Skills:

1. Comprehend the interrelationships between climate, technology, energy, and economics.
2. Develop basic literacy in climate policy and understand the historical development of environmental policies.
3. Analyze interdisciplinary perspectives on climate issues and their impact on current business practices.
4. Understand and develop business strategies that respond to climate-related challenges and opportunities.
5. Integrate sustainability into core business strategies and operations.

Discipline Specific Skills:

6. Become familiar with a general knowledge of sustainable development and current developments within each of the research topics covered this semester.

Personal and Key Skills:

7. Actively engage in interactive discussions during lectures.
8. Enhance communication skills, including discussion, negotiation, argumentation, and presentation.
9. Develop critical reading and writing skills.
10. Apply theoretical knowledge to real-world business scenarios and case studies.

Learning and Teaching Methods:

The course will utilize a combination of formal lectures, in-class active discussions, case studies, teamwork, and presentation sessions. As much of this class will be in-class discussion driven, significant reading will be required. Guest speakers from industry and policy organizations will enrich the applied learning dimension.

Required Reading:

Textbook: The course will not follow a specific coursebook, it will rather use different reference books as resource materials for different topics.

Reference Books:

- Filho, W.L., & Surroop, D. (2018). The Nexus: Energy, Environment and Climate Change, first edition. Springer International Publishing.

- Tietenberg, T., & Lewis, L. (2018). Environmental and Natural Resource Economics, 11th edition. Routledge. https://doi.org/10.4324/9781315208343
- Blanco, J., & Kheradmand, H. (2011). Climate Change: Research and Technology for Adaptation and Mitigation, first edition. Intech Open.

Reading Material:

The main reading list is given below:

1. Gasparini, M., & Tufano, P. (2023). The evolving academic field of climate finance. *Available at SSRN 4354507*. https://ssrn.com/abstract=4354507
2. Heal, G. (2017). The economics of the climate. *Journal of Economic Literature*, *55*(3), 1046-1063. https://doi.org/10.1257/jel.20151335
3. Becker, G. S., Murphy, K. M., & Topel, R. H. (2011). On the economics of climate policy. *The BE Journal of Economic Analysis & Policy*, *10*(2). https://doi.org/10.2202/1935-1682.2854
4. Common, M., & Stagl, S. (2005). *Ecological economics: an introduction*. Cambridge University Press.
5. Pindyck, R. S. (2019). The social cost of carbon revisited. *Journal of Environmental Economics and Management*, *94*, 140-160. https://doi.org/10.1016/j.jeem.2019.02.003
6. Hardin, G. (1968). The tragedy of the commons: the population problem has no technical solution; it requires a fundamental extension in morality. *science*, *162*(3859), 1243-1248.. https://www.jstor.org/stable/1724745
7. Pástor, Ľ., Stambaugh, R. F., & Taylor, L. A. (2021). Sustainable investing in equilibrium. *Journal of financial economics*, *142*(2), 550-571. https://doi.org/10.1016/j.jfineco.2020.12.011
8. Inkpen, A. C., & Moffett, M. H. (2011). The global oil & gas industry: management, strategy & finance. Tulsa, Okla.: PennWell. ISBN: 9781593702397.
9. Tollefson, J. (2022). Climate pledges from top companies crumble under scrutiny. *Nature*. https://doi.org/10.1038/d41586-022-00366-2
10. Ilhan, E., Krueger, P., Sautner, Z., & Starks, L. T. (2023). Climate risk disclosure and institutional investors. *The Review of Financial Studies*, *36*(7), 2617-2650. https://doi.org/10.1093/rfs/hhad002
11. Bolton, P., & Kacperczyk, M. (2021). Do investors care about carbon risk?. *Journal of financial economics*, *142*(2), 517-549. https://doi.org/10.1016/j.jfineco.2021.05.008
12. Martinsson, G., Sajtos, L., Strömberg, P., & Thomann, C. (2022). *Carbon pricing and firm-level CO2 abatement: evidence from a quarter of a century-long panel*. Mistra Center for Sustainable Markets. https://ssrn.com/abstract=4206508
13. Allen, F., Barbalau, A., & Zeni, F. (2023). Reducing carbon using regulatory and financial market tools. *Available at SSRN*, *4357160*. https://ssrn.com/abstract=4357160
14. Fan, G., & Wu, X. (2022). Going Green: The Governance Role of Environmental Regulations on Firm Innovation and Value. *Singapore Management University School of Accountancy Research Paper*, (2023-163). https://ssrn.com/abstract=4098403
15. Lanteri, A., & Rampini, A. A. (2025). *Financing the adoption of clean technology* (No. w33545). National Bureau of Economic Research. https://people.duke.edu/~rampini/papers/cleantechnology.pdf
16. D'Orazio, P., & Popoyan, L. (2019). Fostering green investments and tackling climate-related financial risks: Which role for macroprudential policies?. *Ecological Economics*, *160*, 25-37. https://doi.org/10.1016/j.ecolecon.2019.01.029
17. Pindyck, R. S. (2022). *Climate future: Averting and adapting to climate change.* Oxford University Press.
18. World Bank. (2010). World Development Report: Development and Climate Change. Retrieved from https://documents1.worldbank.org/curated/en/201001468159913657/pdf/530770WDR02010101Official0Use0Only1.pdf
19. FAO, IFAD, UNICEF, WFP, & WHO. (2025). The State of Food Security and Nutrition in the World 2025 – *Addressing high food price inflation for food security and nutrition.* Rome. https://doi.org/10.4060/cd6008en
20. World Bank Group. (2022). Türkiye Country Climate and Development Report. *CCDR Series. © World Bank*. http://hdl.handle.net/10986/37521

Students will be provided with additional resources throughout the semester, including scientific articles

and policy briefs on climate technologies, energy economics, and climate policy during the semester.

Assessment and Grading:

Grades are not subject to change unless there is a miscalculation. **No individual request for additional study for raising a grade will be accepted. No "extra" work other than those stated below will be accepted or credited.** No non-academic criteria will be considered in grading. The percentages applying to the coursework are seen in the following table.

Form of Assessment	Contribution %	Type of the Assessment	CSLOs covered by the assessments	Feedback Method
Final Exam	25%	Essay type questions	1, 2, 3, 6, 9	Grade announced and oral feedback
Term Project	25%	Students will form groups of three, and each group will be assigned with a term project. The groups will prepare a scientific report suggesting a solution to a climate related technology or innovation problem with a small literature survey, applied solutions, and interpretations of the results on the topic.	1, 2, 3, 4, 5, 6, 8, 9, 10	Grade announced and oral feedback
Presentation	15%	Students will be assigned with several articles. They will be expected to briefly present the research done on the article, purpose, methodology and how the articles are related with the climate – technology – energy – economy perspective.	1, 2, 3, 4, 5, 6, 8, 9, 10	Grade announced and oral feedback
In-Class Short Essay Writing and Workshop	25%	Throughout the semester, students will complete four in-class short essays. Each session will involve writing a brief essay (around 30 minutes) on a topic related to climate issues. These topics will range from defining simple terms related to climate change to interpreting them into business strategies.	1, 2, 3, 4, 5, 6, 9, 10	Grade announced and oral feedback
Discussion, Attendance, and Participation	10%	Class participation during regular lectures.	7, 8, 10	Oral feedback (in person)

Bonus Points: 2 points

Interpretation of current news on climate and technology policies.

Course Policies:

E-mail Announcements: You are required to check all e-mail announcements sent via METUCLASS daily. It is assumed that students have read and will act upon all announcements once they are sent.

Class Format: In class lectures and discussions.

Civility: Civility is mandatory. Developing and maintaining a course environment that is conducive to learning is the responsibility of both students and instructors. Inappropriate behavior either in offline or online course settings will result in at least a request to leave the setting. Students are required to use a

respectful and professional language in discussions and avoid offensive remarks.

Class Participation: A significant portion of the class will be dedicated to discussing the assigned readings. Please note that attendance does NOT equal participation. You are encouraged to demonstrate your knowledge of the assigned material and contribute to class discussions. You may also be called on randomly. In participation, quality is more important than quantity. In-class case discussions, group discussions and hands-on activities are important learning tools used in this course.

Homework: The lowest homework grade will be dropped. There will be **no make-ups for missed homework**.

Final Exam: There will be one exam in this class, scheduled during the finals period. This course does not have a midterm exam. The final exam will measure students' knowledge of the conceptual material covered in the course. The exam will include essay questions. All course materials, including the textbook, lectures, and class discussions, will be included in the examination. **The tentative date for the final exam is TBD.** If students miss the exam, they will receive **no credit** for that part of the course. If you must miss an exam, inform the instructors via e-mail before the exam starts and request a make-up exam.

> **Make-up Exams**: All make up exams will be in an "essay" format and will be provided upon submission of a report from METU Health Care Center (or equivalent) as soon as the student recovers! Make-up exams will be scheduled within the week following the missed exam. There will be no make-up for the make-up exams.

Student Disabilities: Any student who, due to a disabling condition, may require special arrangements to meet course requirements should contact the instructors as soon as possible. Students should present the appropriate documentation from the university's Disability Support Office *(Engelsiz ODTÜ Birimi, ODTÜ Kütüphanesi, Solmaz İzdemir Salonu, Tel: 2107196; engelsiz@metu.edu.tr)* verifying their disability and outlining the necessary arrangements. Please note that no accommodations will be provided prior to the completion of this approved University process.

Academic Regulations: For detailed regulations governing undergraduate studies, please refer to: http://oidb.metu.edu.tr/en/middle-east-technical-university-rules-and-regulations-governing-undergraduate-studies

Academic Dishonesty: The Department of Business Administration has zero tolerance for acts of academic dishonesty. Such acts damage the reputation of METU, the department, and the BA/MBA/MS degree, and they undermine the honest efforts of the majority of students. **The minimum penalty for an act of academic dishonesty is a zero for that assignment or exam.**

Cheating: All university, faculty/institute, and department principles on academic honesty will be strictly enforced. **The usual consequence for academic dishonesty is failure of the course and referral of the case to the Dean of the Faculty/Institute for additional disciplinary action.** Examinations are individual and must be completed without outside assistance of any sort. Students observed cheating during examinations will receive a failing grade in the course. Homework assignments are individual unless otherwise specified by the instructors and must be completed without outside assistance of any sort. Students observed cheating on homework assignments will receive a score of zero for that portion of the semester grade.

Plagiarism: The instructor assumes that students will complete their work independently. By placing their names on assignments (individual or team), students are affirming that the contents are their original work. **While previous work from past students or materials available on the internet may be consulted as a suggestive model, they should not be copied or used without proper attribution.** Using any unauthorized material will be regarded as unethical behavior and will be subject to disciplinary action. If you are unsure about the use of a specific resource, please consult the instructors in advance. All external sources must be appropriately referenced. Although various citation styles exist, such as APA, MLA, etc., any consistent and correctly applied format is acceptable for this course. For further guidance on citation styles, please refer to the following resource: **https://owl.purdue.edu/**

METU Honor Code
Every member of METU community adopts the following honor code as one of the core principles of academic life and strives to develop an academic environment where continuous adherence to this code is promoted. **"The members of the METU community are reliable, responsible and honorable people who embrace only the success and recognition they deserve, and act with integrity in their use, evaluation and presentation of facts, data and documents."**

Tentative Course Schedule

The following table outlines the tentative schedule for the semester. Lectures will emphasize the most important and/or most difficult material. Given the breadth of topics, adjustments may be necessary based on our pace. The students are required to read the chapters **before** they are covered in class.

Week	Month	Day	Topic	Reading Assignment	CSLOs
1	Oct	3	Overview of the Course and Syllabus		-
2	Oct	10	Introduction: What is Climate Change? Adaptation and Mitigation Strategies and Their Importance for Businesses	1, 2, 17, 18	2, 6, 7, 9
3	Oct	17	Role of the Energy Sector in the Global Economy: Understanding Oil and Gas Markets and Energy Security	8	1, 3, 6, 7, 9
4	Oct	24	Innovation in Energy Technology: Business Opportunities and Challenges in Adopting New Energy Technologies *Ex: Renewables, Long Duration Electrochemical Energy Storage in Power Sector*	15	1, 3, 4, 5, 10
5	Oct	31	Green Transition: Impact of Hydrogen and Hydrogen Economy	15	1, 3, 4, 5, 10
6	Dec	19	Climate Change, Regulation, and Policy 1	6, 16, 18, 20	3, 4, 5, 6, 9
7	**Nov**	**14**	**Business Cases: Investment Strategies for Climate Technologies**	**7, 9, 10, 15**	**6, 7, 8, 9, 10**
8	Nov	21	Climate Change, Regulation, and Policy 2	9, 14, 16, 18, 20	3, 4, 5, 6, 9
9	Nov	28	Environmental Economics, Natural Resource Economics, and Ecological Economics	3, 18	1, 3, 6, 7, 9
10	Dec	5	Mitigation Efforts: Sustainable and Resilient Food Systems in Relation to the Food Industry	20	1, 3, 6, 7, 9
11	**Dec**	**12**	**Business Cases: Regulation Formulation and Implementation in Response to Climate Change**	**11, 14, 15**	**6, 7, 8, 9, 10**
12	Dec	19	Climate Technology and Innovation: Workshop	6	1, 3, 6, 7, 9
13	Dec	26	Impact of Carbon Pricing in Business Decisions	5, 12, 17	1, 3, 4, 5, 10
14	Jan	02	Mitigation and Offsetting in Business: How to Utilize CCUS, CDR, and NBS	4, 5, 13, 17	1, 3, 4, 5, 10
-	**Jan**	**-**	**Final Exam**	**All**	**All**