

**FR 3210**  
**Climate Change and its Impact on the World Economy**

**Cass Business School**  
**Spring 2020**  
**Professor Bobby Banerjee**

**Thursdays 1100-1250 @ EG06, Drysdale Building**

Hello and welcome to the module Climate Change and its Impact on the World Economy. This outline explains the aims, structure and content of this module, and provides you with the readings and discussion questions that will form the content of every session. Everything will be on moodle so check your account regularly. Email me if you have any questions about the module.

**About me:** I joined Cass Business School in January 2013. My research interests are broadly in the area of critical management studies where I study various aspects of the political economy such as sustainability, corporate social irresponsibility, social movements, and governance. I am currently the chief investigator in two international research projects – the first examines Indigenous business models for sustainable development and the second is an ethnographic analysis of conflicts in the extractive industries like mining and oil. If you want to check out what I've published in these areas go to my staff profile on the Cass webpage. My contact details:

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**Aims of the Course**

Climate change is arguably the most urgent and potentially catastrophic threat facing the world, with more than 20 countries declaring a climate emergency at the end of 2019. Climate change effects are widespread with harmful social, environmental, economic and political consequences that can lead to violent conflicts over control of resources. Climate change can also be the source of new, profitable business opportunities as well as pose risks to the survival of several industries. This module aims to equip you with the skills to build a clear, analytical and comprehensive framework to understand the

complex issue of climate change. It will provide you with the necessary information, knowledge and problem solving skills to understand the technological, economic, political and institutional forces surrounding climate change and associated resource scarcities. *A key learning outcome of the module is to develop a critical perspective in understanding the world in which we live.* Climate change is a deeply divisive issue with competing ideologies and associated power structures. **A critical analysis of climate change discourses will not only explain the contemporary arrangements in organizations and the political economy but also ask how these particular arrangements came about, whose interests they serve and who gets marginalized as a result.** In other words understanding how we know is as important as what we know. Think of this module as being more about how do I think or make sense of a problem and how particular climate change problems come to be defined by the interests of powerful actors like industry, or government or civil society groups. And ask yourselves why weren't we taught about climate change impacts in our corporate finance or strategy modules? **The real challenge is learning how to think rather than what to think and throughout this module we will analyze not only what we know about climate change but also the specific practices of power that produce that knowledge.** So as you go through the readings that are assigned for this module and start framing your thoughts, think both 'big picture' and local impacts of climate change.

### **Learning Outcomes**

#### Knowledge and understanding:

- Demonstrate knowledge and understanding of the scientific, technological, financial, economic, and global governance issues raised by the onset of dangerous climate change
- Demonstrate knowledge and a good understanding of climate change mitigation concepts, strategies and technologies
- Form a balanced and informed understanding and view of the strategies for adaptation to unavoidable climate change, international cooperation and methods of financing adaptation in developing economies
- Demonstrate knowledge and a sufficient understanding of the implications of climate change, and, mitigation and adaptation strategies on major world industries, such as energy, food and agriculture, water, commodities, minerals and metals, shipping and transport, insurance and healthcare: mitigation and adaptation at the sector level
- Acquire a good knowledge foundation on the implications of impending resource conflicts, raw material shortages, mass migrations and collapsing ecosystems for international political economy, global and corporate governance and activities by MNCs and entrepreneurial start-ups

Skills:

- Understand and evaluate the economic, social, ecological, cultural and political implications of climate change
- Develop, demonstrate and apply analytical skills, problem solving tools and cognitive skills commensurate with the concepts encountered and taught in this module.
- Develop your own viewpoint and communicate it effectively in class – lively discussions are encouraged!
- Work more effectively in teams
- Learn to read, understand, appreciate, and critique academic articles

Values and attitudes:

- Challenge conventional wisdom and develop a critical perspective
- Appreciate the moral, ethical and philosophical issues involved in making management and business decisions in an age characterized by climate change, the need to prevent the collapse of ecosystems and species, resource scarcities, poverty and meeting basic needs in developing economies.
- Become a more critically informed individual who is able to relate personal consumption choices to environmental degradation and social welfare.

**Class Activities, Assessment and Grading**

The module will be delivered as a combination of lectures, case studies, and group discussions. Groups will be formed in the first week and every week, one group will make a summary presentation and lead a class discussion of the readings assigned for that week.

There is no textbook assigned for this module. Selected readings on the topic will be provided and it is the responsibility of each student to access and read all the assigned material. The reading list comprises of cutting edge research in the field of climate change that has yet to find its way into textbooks.

There are two assessment outputs: a group-based project and an individual examination. Weightages are given below:

Project report and presentation	Group	30%
Exam	Individual	70%

Project

Students will form groups of 4 or 5 to carry out the project. The project involves developing comprehensive climate policies and strategies for the following

industries: Electric utilities, oil and gas, coal, mining and metals, automobiles and chemicals. Industries will be assigned to groups in Week 1. In your report you need to analyze each sector in terms of their global industry structure and concentration, greenhouse gas (GHG) emissions trends, the technological environment, the regulatory and policy environment, emissions reporting and carbon disclosure of firms in each industry sector. You also need to identify firm-level emissions reductions strategies, risks and opportunities, barriers to reducing emissions, develop a renewable energy strategy and a stakeholder engagement framework at the level of the firm. Based on your analysis of the climate impact of each sector you need to propose a list of recommendations to policy makers, corporate managers and green NGOs about how to reduce overall GHG emissions in the relevant sector as well as identify climate adaptation strategies. The report should be about 3000 words in length.

### Exam

This exam will consist of an essay on any of the topics we have covered in the module. I want you to demonstrate conceptual clarity and critical reasoning in your essay – not just describe what we know about a particular topic but to problematize it. For instance, instead of describing emissions trading as a policy solution to address climate change you can problematize the proposed solution by asking why do market measures dominate most climate policy regimes? How do powerful fossil fuel corporations shape the global climate policy regime? This enables you to ask the ‘big picture’ question and bring in theoretical perspectives from other fields such as political economy, philosophy, development, and the like. As a result your analysis will be much richer and more complex than simply describing a cap-and-trade emissions scheme. This depth of analysis is required if you’re aiming for a high grade in this module. An excellent answer will draw on more than just the required literature but will extend the current debate by make theoretically sound links between different elements of the climate change framework. Or you could be given the latest annual report and balance sheet of a company like Shell or BP. And you will be asked to design a business plan to shut down the company’s fossil fuel extraction operations in 10 years time while taking into account the economic, environmental and social repercussions. Make sure you follow all referencing requirements in your essay. This is an open book exam – you can use whatever materials and readings you wish. But what I’m looking for in your essay and what will get a higher grade will not be found in the readings but in your thinking. So free your mind and use your imagination.

### **Referencing and Plagiarism**

ALWAYS reference, even if you are just using the assigned material. It is a matter of good practice, and if you don’t, you are effectively plagiarizing. I expect references and a completely reference list in every written submission.

Incomplete and incorrect referencing will carry significant penalties in all assessment outputs. Make sure you are able to distinguish your ideas from the authors' you are citing so when you are describing a particular study ensure that you attribute the arguments you are making to the appropriate sources. Also make sure to put all direct quotations in quotation marks and mention the appropriate page numbers in the text.

### Final Project Presentations

Each group will make a 10-minute presentation followed by a 5-minute discussion during the last two weeks of the module. The final project report is due on **MARCH 20, 2020**.

### Assessment Criteria

Grade-Related Criteria are descriptions of the level of skills, knowledge or attributes students need to demonstrate in order achieve a certain grade or mark in an assessment, providing a mechanism by which the quality of an assessment can be measured and placed within the overall set of marks, as shown in the table below:

Class – Degree (Diploma/ Certificate)	%	Literary	Knowledge	Independent thought, use of sources and research materials	Presentation	Professional
1 (Distinction)	85-100	Outstanding	Comprehensive knowledge of subject area, addresses learning outcomes and assessment criteria in full – be of a professional standard	Where relevant, evidence of independent reading, thinking, analysis. Comprehensive use of sources and links to research and evidence of independent research	Well-constructed	Professional approach to academic practice
	75-84 70-74	Excellent	Strong knowledge of subject area, addresses learning outcomes/ assessment criteria well	Where relevant, evidence of wide and comprehensive reading	Clearly written	Adhere to the principles of good academic practice
2:1 (Merit)	67-69	Very good	Sound knowledge of subject area, good attempt to address the learning outcomes/ assessment criteria, realising all to some extent and most well.	Where relevant, evidence of thorough research of the topic(s)	Well-structured and logically written	Demonstrates good academic practice
	64-66					
	60-63					

2:2 (Pass)	57-59	Good	Knowledge of subject area, attempts to address the learning outcomes/assessment criteria, realising all to some extent and some well but perhaps also including irrelevant or underdeveloped material.	Where relevant, answers will provide some evidence of analysis but may be largely descriptive.	Has structure but this may not always be clear.	Attempts to demonstrate good academic practice will be evident.
	54-56					
	50-53					
3 (Pass)	47-49	Satisfactory	Basic knowledge of subject area, provides some level of response to the learning outcomes/assessment criteria but only realises these outcomes and criteria to some extent and may not include important elements or information that is completely accurate.	Where relevant, development of ideas is limited.	Expression and structure will lack clarity	Evidence of good academic practice will be limited
	44-46					
	40-43					
Fail	37-39	Poor	Unsatisfactory - very limited knowledge of subject area and does not succeed in grasping the key issues. Learning outcomes/assessment criteria will not be realised.	There will be no real development of ideas and few sources will be used or used correctly.	Presentation is confused or incoherent.	Ignorance of good academic practice may be evident
	34-36					
	30-33	Very poor	No real knowledge of subject area; totally inadequate attempt to address the learning outcomes/assessment criteria.	No development of ideas	Confused, incoherent or unstructured presentation	Ignorance of good academic practice will be evident
	15-30					
	0-15					

### Other Expectations

While this is not an easy module I have tried to keep it interesting by adopting a critical perspective on understanding climate change. Climate change is a complex and multidimensional phenomenon and requires a wide range of perspectives. I expect you to bring in a whole new bunch of questions to the debate as we go through the readings and theories. I have a few reasonable expectations that I hope you will follow:

- Please be on time. Also, do not leave early. Both behaviours are simply rude. If you cannot attend a class due to illness or other reasons, I would appreciate if you let me know in advance.
- Cell phones should be off or on silent at all times during class.
- Cheating of any type will not be tolerated. I consider plagiarism (copying from other sources without indicating the source) to be a severe form of cheating. If I detect plagiarized material, you will receive a mark of zero and your case will be passed on to the academic misconduct panel.
- Do come prepared. I try to make the class interactive, and you can only participate in a productive manner if you have read the assigned readings before coming to class. As explained, I deliberately do not give you very much to read, but you MUST prepare. Preparing also includes thinking about what you have read, and how that fits in with the world you observe around you.
- Please attend the guest lecture. The speaker has a demanding industry job and devotes a significant amount of time coming to Cass and speaking to you. Please respect that.

#### Email

Please use your City University account if you want a response to your emails.

#### Flexibility

A tentative schedule for all lectures is included in this outline and on Moodle. The schedule is subject to change. The readings are also subject to change, as I might find new interesting literature as we go along. Occasional departures from the schedule will be announced in class and on Moodle. It is your responsibility to keep up-to-date on whatever changes are made to the course.

#### Work Load

I am aware that you have a lot going on, but if you keep up with the weekly readings and start working on your final project early, you should be fine. Again, I have only assigned 2-3 readings per session, which is not much. In return, I expect that you prepare these diligently!

## Tentative Schedule

Date	Topic	Required Readings
January 23 (Week 1)	Introduction, group formation, module aims and outcomes	Module outline
January 30 (Week 2)	The science of climate change	<p><b>Reading #1:</b> 5<sup>th</sup> IPCC report, 2013.  <a href="http://www.ipcc.ch/report/ar5/wg1/#.Usg0Bf3fZuY">http://www.ipcc.ch/report/ar5/wg1/#.Usg0Bf3fZuY</a></p> <p>Reading #2: United Nations Emissions Gap Report 2019  <a href="https://wedocs.unep.org/bitstream/handle/20.500.11822/30798/EGR19ESEN.pdf?sequence=13">https://wedocs.unep.org/bitstream/handle/20.500.11822/30798/EGR19ESEN.pdf?sequence=13</a></p> <p><b>Video #1:</b> Climate science  <a href="https://www.youtube.com/watch?v=0RyGc8k-BqQ">https://www.youtube.com/watch?v=0RyGc8k-BqQ</a></p> <p><b>Discussant Group 1</b></p>
February 6 (Week 3)	Climate impacts	<p><b>Video #2:</b> Human impact (4:07)  <a href="http://www.youtube.com/watch?v=lnVGzIXmgko">http://www.youtube.com/watch?v=lnVGzIXmgko</a></p> <p><b>Video #3:</b> Climate impacts (4:13)  <a href="http://www.youtube.com/watch?v=thFpjdMmDNY">http://www.youtube.com/watch?v=thFpjdMmDNY</a></p> <p><b>Discussant Group 2</b></p>
February 13 (Week 4)	The economics of climate change	<p><b>Reading#3:</b> Stern, N. (2006). The economics of climate change.</p> <p>Reading #4: Napp, T., Hills, T., Soltani, S.M., Bosch, J., &amp; Mazur, C. (2017). A survey of key technological innovations for the low-carbon economy.  <a href="https://www.oecd.org/environment/cc/g20-climate/collapsecontents/Imperial-College-London-innovation-for-the-low-carbon-economy.pdf">https://www.oecd.org/environment/cc/g20-climate/collapsecontents/Imperial-College-London-innovation-for-the-low-carbon-economy.pdf</a></p> <p><b>Discussant Group 3</b></p> <p><b>Guest lecture: Will Ray, Sustainability Advisor</b></p>
February 20	Climate policy	Reading #5: EU ETS



(Week 5)	EUETS	<p><a href="http://ec.europa.eu/clima/policies/ets/index_en.htm">http://ec.europa.eu/clima/policies/ets/index_en.htm</a></p> <p>Reading #6: Muuks, M., Colmer, J., Martin, R., &amp; Wagner, U.J. (2016). Evaluating the EU Emissions Trading System: Take it or leave it? An assessment of the data after ten years. Grantham Institute Briefing Paper No. 21.  <a href="https://www.imperial.ac.uk/media/imperial-college/grantham-institute/public/publications/briefing-papers/Evaluating-the-EU-emissions-trading-system_Grantham-BP-21_web.pdf">https://www.imperial.ac.uk/media/imperial-college/grantham-institute/public/publications/briefing-papers/Evaluating-the-EU-emissions-trading-system_Grantham-BP-21_web.pdf</a></p> <p>Reading #7: Pearse, R. &amp; Böhm, S. (2015). Ten reasons why carbon markets will not bring about radical emissions reduction. <i>Carbon Management</i>, 5(4), 325-337</p> <p><b>Discussant Group 4</b></p> <p>Guest lecture: Adam Whitmore, Climate Policy Advisor</p>
February 27 (Week 6)	Corporate climate strategies	<p><b>Reading #8:</b> Wright, C., &amp; Nyberg, D. (2017). An inconvenient truth: How organizations translate climate change into business as usual. <i>Academy of Management Journal</i>, 60 (5): 1633-1661.</p> <p><b>Reading #9:</b> Slawinski, N., Pinske, J., Busch, T. &amp; Banerjee, S.B. (2017). The role of time and uncertainty in corporate climate change inaction: A multilevel framework. <i>Business and Society</i>, 56 (2): 253-282.</p> <p><b>Discussant Group 5</b></p> <p><b>Guest lecture: David Hone, Chief Climate Change Adviser, Shell International Petroleum Company</b></p>
March 5 (Week 7)	The governance of climate change.	<p><b>Reading #10:</b> Kyoto Protocol  <a href="http://unfccc.int/kyoto_protocol/items/2830.php">http://unfccc.int/kyoto_protocol/items/2830.php</a></p> <p><b>Reading #11:</b> King, E. (2015). Kyoto Protocol: 10 years of the world's first climate change treaty.  <a href="http://www.climatechangenews.com/2015/02/16/kyoto-protocol-10-years-of-the-worlds-first-climate-change-treaty">http://www.climatechangenews.com/2015/02/16/kyoto-protocol-10-years-of-the-worlds-first-climate-change-treaty</a></p> <p><b>Discussant Group 6</b></p>
March 12	READING WEEK	READING WEEK

(Week 8)		<b>Project reports due MARCH 20</b>
March 19 (Week 9)	The politics of climate change	<p>Reading #12: COP 21: The Paris Agreement</p> <p>Reading #13: Gills, B. &amp; Morgan, J. (2019). Global Climate Emergency: After COP24, climate science, urgency, and the threat to humanity, <i>Globalizations</i>, DOI: 10.1080/14747731.2019.1669915</p> <p>Reading #14: Timperley, J. (2019). COP25: What was achieved and where to next. <a href="https://www.climatechangenews.com/2019/12/16/cop25-achieved-next/">https://www.climatechangenews.com/2019/12/16/cop25-achieved-next/</a></p> <p><b>Discussant Groups 7 &amp; 8</b></p> <p><b>Guest lecture: Liz Parkes, Deputy Director of Climate Change, Environment Agency.</b></p>
March 26 (Week 10)	Towards climate justice and sustainability	<p><b>Reading #15:</b> Lohman, L. (2008). Carbon trading, carbon justice and the production of ignorance: Ten examples. <i>Development</i>, 51: 359-365.</p> <p><i>Reading #16:</i> Black, T. (2016). Race, gender and climate injustice. In Godfrey, P. &amp; Torres, D. (Eds.) Systemic crises of global climate change: Intersections of race, class and gender. London: Routledge.</p> <p><i>Reading #17:</i> Black Lives Matter: The link between climate change and racial justice. <a href="https://climateanalytics.org/blog/2020/black-lives-matter-the-link-between-climate-change-and-racial-justice/">https://climateanalytics.org/blog/2020/black-lives-matter-the-link-between-climate-change-and-racial-justice/</a></p> <p><b>Discussant Group 9</b></p> <p><b>Guest lecture: Climate activism. Lia Dover &amp; Dan Ritman from XR: Extinction Rebellion</b></p>
April 2 (Week 11)	Student presentations	Student presentations