

# **Climate Risks and Opportunities**

GSM 415-001

Summer 2016

Professor: Emilie Mazzacurati, MPP  
Email: [emazzacurati@427mt.com](mailto:emazzacurati@427mt.com)  
Phone: 415.420.0074  
Office hours: by appointment

Course overview: The objective of this course is to provide a working knowledge of the risks and opportunities arising from climate change and climate policy for businesses. We will examine how carbon regulations and climate policy affect companies, and the tools and strategies to manage these risks. We will study how climate change may change the way we do business, looking at the physical, operational and financial impact of climate change, and discuss the emerging tools to foster business resilience. The course has a practical focus and will use real-world case studies to highlight different market and regulatory approaches, and to learn from past and current business ventures in the broader climate sector.

## Learning objectives:

Upon completion of this course, students will be able to:

- Better understand climate change impacts on businesses
- Build a basic GHG inventory for company-wide emissions
- Identify key areas of vulnerability to climate risk for their company
- Assess adaptation options and foster business resilience

Course structure: this course is structured in four modules and will include a mix of lectures, case studies and hands-on exercises.

Pre-requisite: basic knowledge of economics and business

Evaluation and grading: Letter.

Grades will be determined as follows:

- Reading questions and participation to class discussion: 20%
- Group assignment and presentations: 40%
- Individual paper: 40%

### **Module 1: Climate Change & Business – July 10, 2016 (am)**

- Introduction and definitions
- Climate change 101 – the basic science
- Climate change: a moral imperative?
- What do global climate negotiations mean for business?

#### Required readings:

- [\*What We Know: the Reality: Risks and Response to Climate Change\*](#), American Association for the Advancement of Science, 2014
- [\*Guide for Responsible Corporate Engagement in Climate Policy\*](#), A Caring for Climate Report by the UN Global Compact, UNFCCC, and UNEP, in cooperation with WRI, CDP, WWF, Ceres and The Climate Group.

Question on readings (~1500 words):

- Should corporations be involved in climate policy? Why or why not?

### **Module 2: Regulatory Risks & Opportunities: Carbon Regulation – July 10, 2016 (pm)**

- Measuring an organization's carbon footprint
- Federal and state climate policy
- Stranded assets and "transition risks" to the economy

#### Required readings:

[\*Working 9 to 5 on Climate Change: an Office Guide\*](#), World Resources Institute, 2002  
[\*Wasted Capital and Unburnable Assets\*](#), Carbon Tracker Initiative, 2013

Question on readings (~1500 words):

- In your view, what are the main reasons companies should inventory and reduce their greenhouse gas emissions?

Constitute teams for group assignment.

### **Module 3: Climate change impacts on the value chain – July 24, 2016 (am)**

Student presentations on climate risk strategy (group assignment)

- Assessing risk and vulnerability in the value chain
- Changes to customer perception, expectations, and needs
- Managing investors' expectations

#### Required readings:

[\*Physical Risks from Climate Change: A guide for companies and investors on disclosure and management of climate impacts\*](#), Calvert Investment Fund, Ceres and Oxfam, May 2012  
[\*The Business Case for Responsible Corporate Adaptation\*](#), A Caring for Climate by the UN Global Compact, UNFCCC, and UNEP, in cooperation with WRI, CDP, ND-GAIN, PwC, and Four Twenty Seven. December 2015. (Read Introduction, Chap. 1-2 and 4, and 2 case studies of your choice)

Question on readings (~1500 words):

- Should businesses focus on short term or long term risks when they prepare for climate change?

#### **Module 4: Building Business Resilience – July 24, 2016 (pm)**

- The Resilient Enterprise: tools and concepts on risk management and corporate resilience
- Climate War Games: an interactive role play exercise on corporate climate risk management

#### Assignment description:

**Readings (20%):** prepare short (~1500) written answers to the questions on readings listed above. Turn in your answer at the beginning of class (hard or soft copy), and come prepared to discuss at the beginning of each module.

**Group Assignment (40%):** to be discussed in class.

#### **Take-home Assignment (40%):**

Option #1: Pick a large company of your choice (preferable S&P 500). Please choose a different company than the ones we studied in class. Research its products, operations, supply chain and markets, and analyze its key potential risks to their value chain related to the physical impacts on climate change using the “Risk Event Card” (provided by instructor). You may include direct and indirect impacts.

Write a brief memo (5 p) to your company’s Corporate Risk Officer to discuss what your company’s strategy should be with regard to climate change risks. Highlight in particular: why climate change may be an issue (or not), which activities / processes/ products are potentially exposed, possible risk mitigation measures and / or additional data / research needs.

Email me both the memo and the spreadsheet within two weeks of the last session.

Option #2: write a 5 pp paper on a topic of your choice directly relevant to the class’s topic and discussion (the paper could discuss GHG mitigation, climate policy, impacts of climate change on the US economy, etc.). Topic needs to be approved by instructor first.

#### **About the instructor:**

Emilie Mazzacurati is Founder and CEO of Four Twenty Seven, Inc. Emilie has been advising governments and large energy, financial, and industrial corporations for over ten years, helping them identify strategic opportunities in the sustainability and climate change field. With Four Twenty Seven, she has created a suite of innovative tools to help businesses measure and manage their climate risk exposure.

Previously, she was Head of Carbon Analysis at Thomson Reuters Point Carbon, where she directed Point Carbon’s research department in the U.S. She has published extensively on climate policy and carbon markets and is a frequent speaker at industry events. Emilie teaches on climate risk management, carbon markets, CDP reporting in academic and corporate settings.

Emilie holds a Master of Political Science from the Institut d’Etudes Politiques de Paris (Sciences Po) and a Master of Public Policy from UC Berkeley.

For more details go to [www.427mt.com](http://www.427mt.com)