



[The Engineering Climate Justice Module](#)

Instructor Guide

Introduction

This guide is to help instructors best navigate this module and its activities. There are speaker notes also attached to the module itself, which are very similar in content; this is just a more comprehensive and compact guide.

These slides are tailored to help students participate in an active in-class discussion, featuring interactive activities focusing on pre-assigned readings.

The Engineering Climate Justice Module Objectives:

By the end of this module, students will:

- Understand engineering as a proactive approach to climate justice
- Identify the intersection between environmental justice and engineering
- Discuss personal responsibilities as engineers
- Explore case studies from MIT

Pre-Assigned Readings (for Students):

- **From Slide 7**
 - 1) Read through Tom Newby's article, '[Engineering Climate Justice](#)'
- **From Slide 8**
 - 1) Read '[Engineering and Environmental Justice](#)'.
- **From Slide 9 (can be done in class)**
 - 1) Read through 'The Climate is Changing. Engineering Education needs to change as well'
- **From Slide 13 (can be done in class)**
 - 1) Spend 10 minutes Reading: [Climate Justice is the Design Challenge of our Lives](#)
- **From Slides 16, 17, and 18 (pick one, can be done in class)**
 - 1) [Anthro-Engineering in Mongolia: MIT NEET/ Anthropology](#)



- 2) [Environmental Engineering and Climate Justice: An Interview with Juliana Mitkiewicz](#)
 - 3) [Xylem Water Filters](#)
- **From Slide 20**
 - 1) [Watching a Video Lecture: Me. We. Moving from Ethics to Justice in Engineering](#)
 - **From Slide 21**
 - 1) [Engineering for the People: Putting Peace, Social Justice, and Environmental Protection at the Heart of All Engineering](#)

In-Class Activities to Expect

- **From Slide 7: Activity 1**
 - 1) Take 10 minutes to read through the article 'Engineering Climate Justice', and then answer the following questions in groups.
 - a) Discuss the triple injustice; can you think of examples of each kind?
 - b) How are engineers' moral obligations also pragmatic ones?
 - c) What are the implications of climate justice for engineers?
- **From Slide 9: Discussion**
 - 1) Have an open discussion on the article, 'The climate is changing. Engineering education needs to change as well'. What do students think? What did they take away?
 - 2) Some guiding thoughts: According to the article, how should engineering education change in the face of climate change and climate justice? What is the engineering skill set, and why is it necessary? Do you agree that there is an obligation to adopt the skill set upon becoming an engineer? Why?
- **From Slide 14: Activity 2, Group Discussion**
 - 1) According to the article about climate justice being the design challenge of our lives:
 - a) In what ways is the climate crisis an issue of social justice?
 - b) According to the article, how do engineers interact with poorer/underserved communities?
 - c) As engineers, how do we benefit from solving problems of injustice?
- **From Slide 15**



1) Activity 3: Case Studies & Jigsaw Activity

After reading the article each student was assigned:

- a) Talk to at least one person from each of the other group, switching after 3 minutes. Some prompts that can aid in your discussion:
- b) Give a brief outline of the case study you read about
- c) What helped with the success in the study? What roles did the engineers of the project play?
- d) What are some ideas can you take with you to implement in future projects?
 - i) What were some elements of climate justice that you noticed?

- **From Slide 22: Activity 4, Informal Debate on 'Should climate justice be at the heart of engineering?'**

- 1) Line yourself up, according to what your answer to the question posed is- on one end in a 'definitely no', and on the other, 'definitely yes'. Then, discuss your reasoning!

Continued Learning

1. Create a presentation on a topic of your choice, demonstrating how Tom Newby describes engineering climate justice. What principles from his article (facts, theories, arguments) are critical to include in civil and environmental engineering?
2. Search through the D-Lab website, and find a case study that ties in concepts of climate justice. Explain how it does this (500 words max).
3. Imagine you were designing a project of your choice in Massachusetts/in a community you know well. How could you implement climate justice concepts into a design, both considering how engineering has a relationship with 1) the Earth, and 2) social injustices?