

University of Notre Dame
Center for Sustainable Energy at Notre Dame (ND Energy)
Course: Puerto Rico: Road Map to a Renewable Future
Spring 2022
Credit: 1 (S/U)
Schedule and Room: TBD
Instructor of Record: Dr. Peter Burns
Fee: None

Course Overview

After Hurricane Maria hit Puerto Rico in 2017, the island's energy infrastructure was destroyed. The lack of electricity in rural areas for months following the storm contributed to thousands of post-hurricane deaths. Earthquakes in late 2019 knocked out a major natural gas power plant. Expensive and unreliable energy plagues the island as it struggles to come out of bankruptcy and privatize the energy distribution system. While some want to increase the importation of liquid natural gas to build a stronger economy, there are others who advocate for decentralized grids, making use of abundant solar, wind, and water resources. There is even a group exploring the use of nuclear energy. This course will examine the complications of the energy conundrum on the island from a variety of perspectives. Any community attempting to reduce its carbon footprint needs inexpensive and reliable options. Solutions involve an understanding not only of the technical challenges, but also a consideration of the economic, political, historical, and ethical issues unique to each location.

Laudato Si is well known in Catholic circles as Pope Francis' call to "care for our common home." In fact, the Church has been advocating for "energy ethics" at least as early as a statement from the US Catholic bishops in 1981. Concepts such as moral globalization and intergenerational justice have moved front and center with the looming climate crisis. We are at the cusp of an age when clean, reliable energy could become affordable for all as a human right, or fossil fuels will continue to be a dominant path to short-term profits. Puerto Rico reflects this very reality- teetering between becoming either an island of renewable microgrids or a natural gas distribution hub for the Caribbean.

During a required weeklong immersion in Puerto Rico, participants will have time to listen and learn about the opportunities and challenges that lie ahead. The week will be split between San Juan and the mountain town of Adjuntas. The main goal will be to gain insights from those caught in the struggle; the hard choices they must make and the complicated, sometimes messy path they are trying to forge. San Juan will offer the opportunity to explore cultural and historical sites, interact with students at the University of Sagrado Corazón, and meet with business and political leaders. In Adjuntas, students will engage with the staff of an award-winning community center, *Casa Pueblo*. This organization, led by Arturo Massol Deyá and his father Alexis Massol Gonzalez, has united much of the community around environmental stewardship. Students will also participate in solar installations and demonstrate energy basics in an elementary school near Adjuntas.

In weekly classes before the trip, participants will meet with members of the Puerto Rican diaspora; review a non-technical survey of energy options and the social and economic ramifications of each; and most importantly, examine their own lifestyles and enter into frank discussions about choices made on a daily basis that affect the environment.

Puerto Rico's story is being played out in thousands of villages and towns around the world as we all struggle with the balance between personal comfort and convenience vs. our responsibility as Christians and citizens to our common home and the future of the planet. After returning to campus, participants will consider ways that they can stay engaged and set personal road maps to renewable futures.

The goals of this course are that each participant shall...

1. Gain an appreciation of the history, economics, politics, and cultural heritage of Puerto Rico.
2. Understand the energy options for the island and the economic/social/political implications of each.
3. Observe how a community can be united around a common cause and the characteristics of effective leadership.
4. Learn to listen with an open and informed mind, respecting each person's right to speak honestly based on his personal history and aspirations.
5. Examine her personal lifestyle and attitudes in regards to consumption in light of the immersion experience and Catholic Social Teaching.
6. Take steps to become an active citizen, considering ways to take a leadership role and advocate for those whose voices are muted.

Course Requirements

The seminar, *Puerto Rico: Roadmap to a Renewable Future* is a one-credit course, graded "S" or "U." It may be used for the capstone experience toward the Energy Studies Minor. In order to receive an "S" for the course, the following requirements must be met:

- Active participation in all on-campus classes
- Completion of all assignments
- Enthusiastic engagement in activities during the week in Puerto Rico.

Class Expectations

In order to learn effectively as a group, each participant must be willing to share and listen. Living conditions in Puerto Rico will not be equivalent to Notre Dame dorm life and may require some tolerance and resiliency. To maximize the learning experience, students should be willing to...

- Complete required background readings and be prepared to discuss the materials.
- Be active listeners, absorbing what the speaker is saying rather than thinking about their responses.
- Show respect for informed opinions and disagree intelligently.
- Be willing to try new foods and experiences, showing appreciation for efforts put forth on behalf of the group.
- Step outside of your personal comfort zones and allow the course to be life-changing.

Grading

- Satisfactory:
 - All assignments are on time, contain accurate insights into each topic, and are professionally composed.
 - There is active participation in each meeting, listening as well as speaking.
 - Behavior during the immersion experience shows respect for the host and fellow participants.
- Unsatisfactory:

- o This course is primarily designed to be a learning experience. Students who do not complete assignments, do not participate actively, or detract from the learning of others in the group will be warned and given an unsatisfactory grade if improvement is not made. The week in Puerto Rico is required for a satisfactory grade.

Academic Code of Honor and Dulac

All participants are expected to uphold the Academic Code of Honor pledge, "As a member of the Notre Dame community, I will not participate in or tolerate academic dishonesty." See the complete Student Guide at <http://honorcode.nd.edu>. Violation of any portion of *DuLac*, including while in Puerto Rico, may result in a referral to the Office of Community Standards and may affect the course grade.

Note about Health and Accessibility Concerns

It is our hope that this seminar will be accessible to all who wish to participate. However, while in Puerto Rico, time will be spent outside in a hilly environment that some may find challenging. Please contact Anne Pillai, apillai@nd.edu, if you anticipate problems so that we can try to make appropriate accommodations. In addition, [the CDC recommends](#) some vaccinations and precautions that each participant should discuss with his health care provider in a timely manner.

Course Calendar and Assignments

DATE	TOPICS	ASSIGNMENT DUE*
1/31	-Introduction to the seminar and each other -History of energy issues and challenges facing Puerto Rico	Preparation #1
2/7	-Leadership and community building -Casa Pueblo and Adjuntas	Preparation #2
2/14	-Energy, economics, politics, earthquakes; updates since Hurricane Maria -Guest speaker-Yamil Colon	Preparation #3
2/21	-Solar Installation-Guest speaker from Let's Share the Sun -The Nuclear Option- Guest speaker, Prof Peter Burns -Travel info	Preparation #4
2/28	-Laudato Si and Catholic Social Teaching -Trip prep and final questions- Guest speakers from past seminar class	Preparation #5
3/5-3/12	IMMERSION IN SAN JUAN AND ADJUNTAS (Required)	
3/21	-Reflections	Preparation #6

Preparation for Class #1

The first class will introduce us to each other and to some of the problems facing Puerto Rico around the time of Hurricane Maria in 2017/2018.

- Watch Frontline's documentary [Blackout in Puerto Rico](#),
 - List five highlights that you think best summarize the problems facing Puerto Rico as the result of Hurricane Maria.
- Submit comments to [the class folder](#).

Preparation for Class #2

We will be visiting Casa Pueblo, a community organization that is building a solar energy community from the ground up. Their story is inspiring and can offer many insights into how to pull a community together around renewable energy.

Create a list of thoughts and questions that come to mind as you learn more about Casa Pueblo. Upload it to [the class folder](#) for Prep#2 before class.

- Explore [Casa Pueblo's website](#); use Google translate if necessary.
- Watch [this video](#) about the solar co-op in Adjuntas:
- Watch [this video](#) about the Honnold Foundation and their work in Adjuntas:
- Read the following articles
 - “Our Energy for Our Country,” *Scenario Journal 07: Power*, January 2020, <https://scenariojournal.com/article/energy-for-our-country/>
 - Puerto Rico’s Energy Insurrection, *The Intercept* <https://theintercept.com/2020/02/09/puerto-rico-energy-electricity-solar-natural-gas/>
 - Renewable energy for Puerto Rico, *Science Magazine*: <https://science.sciencemag.org/content/362/6410/7.summary>

Preparation for Class #3

The articles below examine issues related to Puerto Rico’s bankruptcy, the effects of the earthquake on energy production, the recent privatization of the distribution system, and a little about the politics playing out in the background. Feel free to look around for more information on topics that interest you.

Create a list of thoughts and questions that you have about the main topics covered. Submit them to [the folder for Class #3 before class](#). Professor Yamil Colon will be joining us during class to answer questions and provide insights. If you can’t access the sites, there are versions in the class folder.

- [*Critics say Puerto Rico's bankruptcy deal will endanger funds for public services*](#) by Adrian Florido; NPR
- [*A judge signs a deal to allow Puerto Rico to start emerging from bankruptcy*](#); The Associated Press and NPR
- [*'Why Don't We Have Electricity?': Outages Plague Puerto Rico*](#), New York Times and NPR
- [*An arrest warrant, a fugitive CEO: Puerto Rico's effort to privatize its electrical grid is off to a rocky start*](#); by Arelys R. Hernandez and Douglas MacMillan; Washington Post
- This is the article that links from the Washington Post report above: [*Blackouts worsened since the entry of LUMA, acknowledges a company document*](#); by Elivan Martinez Mercado; Center for Investigative Journalism
- View current power outages across the island [at this site](#).
- [*With Earthquakes and Storms, Puerto Rico's Power Grid Can't Catch a Break*](#); by Patricia Mazzei, Ivan Penn and Frances Robles; NYT
- [*Why Puerto Rico has debated U.S. statehood since its colonization*](#); by Byerin Blakemore; National Geographic
- [*In Puerto Rico, Young Voters Are Trying To Shake Up Traditional Party Politics*](#); Adrian Florido; NPR

- [The Rush for a Slice of Paradise in Puerto Rico](#); Coral Murphy Marcos and Patricia Mazzei; NYT
- [Puerto Rico legislator calls on US Congress to prevent an “illegal tax” on Puerto Rico solar](#); by William Driscoll; PV Magazine
- [DOE, DHS, HUD Launch Joint Effort with Puerto Rico to Modernize Energy Grid](#); Department of Energy

Preparation for Class #4

While in Puerto Rico, we will be working with a non-profit to install solar panels on homes of people with medical needs. We may also be meeting with a group researching the feasibility of installing modular nuclear reactors on the island. Use these as a starting point to gather information about these topics.

Create a list of thoughts and questions that you have about the main topics covered. Submit them to [the folder for Class #4 before class.](#)

- Explore the website for [Let's Share the Sun](#) and view their video on Puerto Rico.
- Watch [the recording](#) of the panel discussion last spring on the future of nuclear in Puerto Rico.

Preparation for Class #5:

- There are many references to energy and climate change in [Laudato Si](#). Find a section that is meaningful to you and place it on a slide [in this folder](#). Site the paragraph number. Do not replicate a passage already in the presentation. We will discuss these in class.

Preparation for Class #6:

Using daily notes and reflections from the time in Puerto Rico, compile a summary of thoughts for each day you were on the island, beginning with Sunday, March 6 and ending with Friday, March 11. Include approximately 100-200 words per day. Upload the paper into the folder labeled “Final Paper” and be prepared to discuss the trip in class. We may use quotes from these papers on our website or in future publications.

Attendance Policy

It is very important to attend every session pre/post immersion as well as participate each day in Puerto Rico. Only [University approved absences](#) will be excused and appropriate documentation should be provided. Notification of absences should be sent to the seminar directors as soon as possible. Make-up assignments cannot replace the team building that we hope to achieve. If you are part of interhall or club sports that will not allow you the flexibility to attend each class, you should not apply for this seminar.