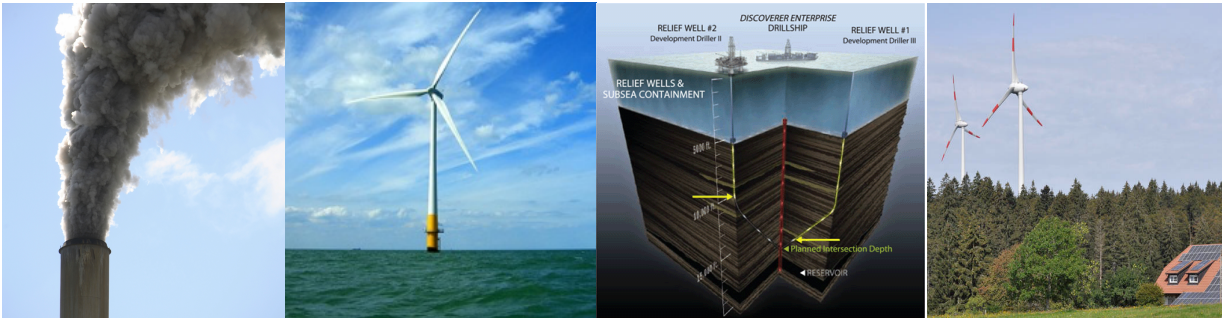


BRYN MAWR COLLEGE

ENVIRONMENTAL STUDIES & GEOLOGY

Fall 2026

GEOL B206: Energy Resources & Sustainability



Instructor: **Don Barber**

email: dbarber@brynmaur.edu

Class Location: **Park room 100**

Time: **MWF 11:10am – 12:00 noon**

Through lecture, readings, in-class discussion, and hands-on data analysis, we address questions such as the following:

- What resources currently supply most of the world's energy?
- What are the climate impacts of human energy consumption?
- What other environmental and socioeconomic issues arise from burning carbon-based fossil fuels?
- How feasible is it to use more nuclear power?
- What alternative energy resources are available?
- What are the limitations, challenges and obstacles to obtaining more energy from renewable and sustainable sources?

GEOL B206: Energy Resources & Sustainability

Don Barber - pronouns: he, him, his
Park Sciences, room 366

Online office hours **TBA**, please email for appointment!

Environmental Studies and Geology
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The use of carbon-based fossil fuels by human societies has wrought major environmental changes both locally and globally, even as the abundance of energy from these fuels has enabled improvements in the human condition (by some measures). A range of non-carbon-based and renewable energy technologies exist, but widespread adoption and deployment of these alternatives has been slow.

Through readings, lecture, online film clips and occasional homework exercises, GEOL 206 provides an overview of scientific knowledge about climate change and other environmental concerns stemming from human energy use in the past, present and future. We evaluate the feasibility of non-renewable and renewable energy resources and technologies over a range of timescales. Lastly, we consider some of the inevitable trade-offs that must be made in attempting to prioritize environmental concerns while also meeting energy needs.

Required Text:

Richard Wolfson (2023) Energy, Environment & Climate, 4th edition, Norton, New York, 448 pgs. plus appendices. *E-book and print versions available in College Bookshop.*

Other articles, videos and data provided via web links or PDF files posted **on Moodle**.

Another useful book – you are not required to purchase this book:

David J.C. MacKay (2009). Sustainable Energy–Without the hot air. Version 3.5.2. UIT Cambridge. ISBN 978-0-9544529-3-3. **Free PDF available online** from <http://www.withouthotair.com/>

Assignments / Grading

- 10% **Participation:** attentiveness to reading, asking questions, noting relevant current events.
- 50% Several **written & analytical exercises** that may include reading responses, occasional homeworks, and final paper check-ins such as topic ideas, list of references and/or data sources.
- 40% **Final report** (no more than 8 pages of text) that analyzes physical, environmental and technological feasibility of one or more renewable energy resources in a city, state or region of the US or another country. What are the advantages and disadvantages of using renewable energy in that location? Socioeconomic, cultural and political considerations often strongly influence energy choices, but for this assignment your analysis should primarily focus on physical science considerations. *Note: you are encouraged to provide maps, diagrams, graphs or other visuals with your report, but these are excluded from the page length count. Your cited references also are not included in the 10 page (double-spaced) paper length limit.*

PDF due by email no later than 12:30pm, Friday, 18 Dec 2026.