



Energy Innovation and Emerging Technologies Certificate

Course Syllabus – Economics of Competing Energy Technologies (XEIET201)

Course Description

While the debate over global warming continues, there's increasing recognition around the world of the need to reduce our collective carbon footprint. Yet disagreement remains over the benefits of renewable energies versus traditional sources like coal, natural gas and oil. Business leaders, policy makers and the general public generally seek lower carbon energy sources but struggle to accurately determine their cost effectiveness. This course will examine the economics of competing power sources from an investor perspective. Learn how to evaluate alternative technologies that have vastly different developmental and ongoing costs. Evaluate public policy instruments including taxes, regulations, and incentives and learn how they can influence outcomes. Study real-world examples of alternative energies and the financial models that can be used to assess results. Explore the potential for future cost reductions through technological improvements..

Course Modules

- Introduction and Overview
- Levelized Cost of Electricity
- Carbon Emissions and Regulations
- Cellulosic Biofuels: A Case Study
- Solar Photovoltaic Power
- Intermittency and Time of Day Pricing
- Outlook

Course Requirements

Please watch all course videos and review the case study, if applicable. Successful completion of the final examination and course evaluation is required to complete this course. Access to the exam is available to you within the learning platform and your mystanfordconnection account. The exam consists of multiple choice questions and is administered online. A score of 90% is required to successfully pass the exam. Once you have passed the exam and completed the evaluation, a digital record of completion will be emailed to you.

Course Materials

All course materials are provided via the course website. These include the course videos, assignment instructions, and other course handouts.

Questions

For content-related questions, please email ask-the-professor-energy@lists.stanford.edu. Be sure to include your name and the course number XEIET201. For questions relating to course materials, billing, testing, general program information, etc., please contact SCPD Student Services at scpd-energy@lists.stanford.edu or call (650) 725-3016 between the hours of 8:30 am and 4:30 pm, Monday through Friday, Pacific Standard Time.