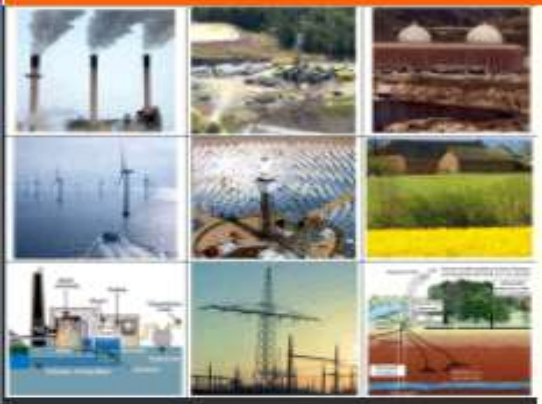
Energy: Science, Technology and Society

W. Udo Schröder

CHM 266/ CHE/ EES/ PHY Introduction to energy issues



Links

Course Syllabus
Class Venue/Times

Links on this page:

Synopsis

Disclaimer

1. **Energy and the Environment**
   Energy demand and outlook
   Population pressures, new economies
   Climate change
2. **Energy Uses and Resources**
   Energy uses in high-tech societies
   Fuel reserves and resources
3. **Energy Conversion, Science and Technology**
   Equivalent forms of energy
   Electro-mechanical power generation
   Electro-chemical power generation
   Physics of solar cells
   Thermodynamic principles, heat engines, combustion
   Nuclear power (pdf, htm)
4. **Energy Distribution and Storage Infrastructure**
   Fuel transport
   Electrical grid (dumb and smart)
   Energy storage technologies
5. **Future Energy Strategies: Potential and Risks**
   Risk factors for environment, health and climate
   Hydrocabon fuel technologies (clean coal, CCS, shale, synfuels)
   Nuclear power (new nukes, fusion)
   Development of renewable energy sources
   Energy conservation
6. **Sustainable Energy Policies**
   Selective subsidies of energy technologies
   Energy conservation strategies
7. **Public Attitudes and Education**
   Common myths and misconceptions
   Activist approaches to STEM education