COURSE OVERVIEW

This course provides a broad overview of human history from earliest hunter-gatherers up through the Industrial Revolution and the first-half of the 20th century as seen through the lens of energy. Investigated will be methods of energy generation, and conversion, ranging from the human body to the internal combustion engine, and the interaction of these methods with other aspects of society and economy. The course will mainly be concerned with contrasting the “organic economy” that obtained for much of human history, where energy was derived from human or animal power, with the energy regime following the widespread use of fossil fuels -- coal, oil and natural gas -- during the Industrial Revolution. The course will conclude with a look at energy sources developed during the first half of the 20th century, particularly the gas-turbine and nuclear fission reactor, before concluding with a look ahead to the development of renewable energy sources in the later 20th and 21st centuries.

LEARNING OUTCOMES

1. Identify the principal forms of energy generation and conversion throughout human history
2. Analyze sources, whether written or visual, for the development of energy systems in human history.
3. Discuss the influence of energy on the development of human civilization.
4. Critically assess contemporary scholarship on the interaction between energy and various historical processes.

COURSE TOPICS

Energy Density; Conversion Efficiency; Energy in Hunter-Gatherer Societies; The Body as an Energy System; The Neolithic Revolution; Agriculture and Urbanization; Animal Labour, Crop Yield; Energy systems in Egypt, Mesopotamia, China, Mesoamerica and Early Europe; Wind Power; Levers and Pulleys; Water Wheels, Transportation; Oared and Sailing Ships; Metallurgy; Coal; Steam Engines; The Industrial Revolution; Electricity and Electrification; Gas Turbines; Synthetic Fertilizers; Rail Transport; the Automobile; Information and Communication Technology; Warfare; Nuclear Energy

COURSE READINGS