

Course Code	Course Title	Credit Hours
ENS 804	Energy and Environment	3 (3+0)

Course Description

This course is designed to equip the students with a working knowledge of energy and the environment. The course's main objective is to emphasize the strong relationship between energy and environment in the modern economy. For developing a country energy generation from different sources is causing adverse environmental impacts. This course will create awareness among students and help in deciding the source of energy in the country.

Course Outline

Forms of energy, Sources of energy and their environmental/health concerns.

Non-renewable and renewable sources:

Fossil fuels, nuclear, solar, wind, hydel, tidal, waste-to-energy, biofuels, thermal, fuel cells, hydrogen as energy carrier etc.

Overview of energy sources in Pakistani perspective:

Losses of energy and its conservation; Building, insulation, cooling, lighting etc. materials, hybrid vehicles; Future trends in energy production and conservation.

Recommended Books

1. Energy & Environmental Security: A Cooperative Approach in South Asia. Suba Chandran, D. and Jeganaathan, J. (Eds.). IPCS, New Delhi, India. 2011
2. Biomass, Energy, and Environment: A Developing Country Perspective from India. Ravindranath, N. H. and Hall D. O. Oxford University Press, USA. 1995.
3. Energy: Its Use and the Environment. Roger A. Hinrichs, Merlin H. Kleinbach. Cengage Learning; 5th edition. 2013.