Lecturer: Prof. Igor Sutlović, Ph.D.

Course: Energetics and the Environment (I-203)

COURSE DESCRIPTION

Forms of energy – primary, transformed and useful forms of energy. Energy conversions and their impact on the environment. Availability of energy as a condition for the development of society. Energy independence and security of supply. Achieving climate neutrality in the context of growing energy consumption. Climate policies and the achievement of set goals and obligations in the national and global framework. The influence of climate policies and geopolitical factors on the price of energy. The energy market and the formation of energy prices in the deregulated market – the role of the state in protecting consumers from global disruptions in the energy market and energy poverty. New technologies for energy production and storage. The position and role of fossil fuels in energy, especially in industrial applications. Nuclear energy and renewable energy sources in the function of achieving carbon-neutral electricity production. Fossil fuels as raw materials for the petrochemical industry. Greenhouse gases – properties and main sources. Measures to mitigate GHG based on the Kyoto Protocol. Carbon dioxide emissions trading system. Allocation of free emissions with a special focus on industrial plants. The cost of emissions as an additional burden on the final price of the product. Possibilities of reducing the cost of emissions through the increase of energy efficiency measures and the introduction of new technologies in the production and consumption of energy through the analysis of the selected production process.