Politechnika Krakowska
im. Tadeusza Kościuszki

FACULTY: ENVIRONMENTAL ENGINEERING

COURSE TITLE: AIR PROTECTION

Number of contact hours: **45**

Duration: **1 semester (spring)**

ECTS credits: **5**

Programme description: Students become acquainted with the legal status by learning current legal acts regarding the protection of the atmosphere, permissible emissions of pollutants and emission standards. Basic physical and chemical processes used in technical devices, methods and devices to reduce emissions into the atmosphere will be presented.

Specific problems discussed during lectures, workshops and seminars will cover:

- The ways of creating and spreading natural and anthropogenic atmospheric air pollutants.
- Mechanisms of their impact on the environment.
- The role of individual fields of human activity on changes in the cycles of elements and substances.
- The effect of changes in the cycles of elements on the atmosphere.

Students will gain knowledge of the construction of selected types of devices used to measure gaseous pollutants; would be able to identify the type of gas pollution and the selection of a method to limit the effects of emissions; could calculate the emission of the active substance and quantity of reagent used in selected flue gas cleaning devices; practicing responsible teamwork and managing work time.

Course type (hours): lectures (30), workshops (10), and seminars (5)

Literature: *Atmospheric Science: An Introductory Survey*. Peter V. Hobbs, John M. Wallace, Elsevier, 2006.

Beyond Smoke and Mirrors: Climate Change and Energy in the 21st Century. Burton Richter, Cambridge University Press, 2010, 2014.

Fluidization Engineering. Daizō Kunii, Octave Levenspiel, Butterworth-Heinemann, 1991.

EPA, online documents.

Assessment method: joint group projects

Lecturer: Małgorzata PILAWSKA; PhD, D.Sc.

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