

A Series of Lectures on:
Biogeochemical and societal cycling
of chemicals in the environment

Prof. Jozef M. Pacyna

15 lectures for Ph.D. students

(15 x 45 min)

Period of lecturing: 11 – 14 January, 2016

1. The concept of cycling of chemicals in the environment as a tool to study their sources, transport, behavior, and fate. (1 x 45 min)
2. Application of transport, migration, and fate models for the assessment of chemicals in various ecosystems at local, regional and global scale. (4 x 45 min)
3. Assessment of biogeochemical cycling of carbon in the environment in the context of climate change processes and effects. (2 x 45 min)
4. Assessment of biogeochemical cycling of sulfur and nitrogen in the environment in the context of acidification of various aquatic and terrestrial ecosystems as well as nutrient availability. (1 x 45 min).
5. Assessment of biogeochemical cycling of heavy metals and persistent organic pollutants (POPs) in the context of contamination of various ecosystems. (2 x 45 min)
6. Assessment of planetary cycling of selected Earth's metals, including aluminum and iron in the context of "grand nutrients" studies in the Universe. (1 x 45 min)
7. Application of Material Flow Analysis (MFA) method to present and assess societal cycling of chemicals in the anthroposphere (industry, agriculture, other economic sectors). Assessment of stock and flows of chemicals within these sectors. Examples of various studies in Europe and the United States. (1 x 45 min)
8. Application of various modeling tools for assessment of migration of chemicals in food chain. The pathways of chemicals to enter human body. (1 x 45 min)
9. Application of monitoring networks for verification of results from modeling the cycling of chemicals in the environment. (1 x 45 min)
10. Application of results from cycling models in the Decision Support System (DSS) in building strategies and policies for reduction of adverse effects of chemicals on the environment and human health. (1 x 45 min)

| Termin | Dzień tygodnia | Godzina | Miejsce |
|-------------------|-----------------------|----------------------|---|
| 11.01.2016 | Poniedziałek | 12.15 – 16.00 | Minicentrum Konferencyjne (Luwr) |
| 12.01.2016 | Wtorek | 12.15 – 16.00 | Minicentrum Konferencyjne (Luwr) |
| 13.01.2016 | Środa | 12.15 – 16.00 | Minicentrum Konferencyjne (Luwr) |
| 14.01.2016 | Czwartek | 12.15 – 16.00 | Minicentrum Konferencyjne (Luwr) |