

COURSE TITLE:

## MICROMETEOROLOGY

COURSE DESCRIPTION:

Main goals: introduction to micrometeorological processes in the surface atmospheric layer which is the place of human activities and give the practical knowledge for the investigation and planning air quality, human comfort, etc.

Main subjects: Definition and methodology of the micrometeorology. Structure of the boundary layer and the surface layer, molecular and turbulence diffusion, governing equations, principles of the modeling of momentum energy (latent and sensible heat), and mass (vapor, trace gases, aerosol) fluxes, closure hypothesis. Surface energy and water budget. Methodology of the surface layer measurements (radiation, energy budget components, profiles, fluxes). Surface as the initial and final point of the atmospheric cycles of air pollution.

Definition of microclimate. Indoor climate. Special microclimates (uniform and non uniform surfaces, ocean, snow, desert, short and tall vegetation, etc.). Application of microclimatological knowledge (renewable energy potential: wind and solar, indoor air quality).

LITERATURE:

Compulsory literature:

Arya, S. P., 2001: Introduction to micrometeorology. Academic Press, 420 p.

Optional literature:

Oke, T. R., 1987: Boundary Layer climates, Methuen, 435 p.

Foken, Th., Nappo, C. J., 2008 Micrometeorology. Springer, 328 p.

TEACHER:

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