

Level: master				
Course title: Selected parts of modern meteorology				
Status: elective				
ECTS: 9				
Requirements: Modelling of the physical processes in the atmosphere II				
Learning objectives Main aim of this course is to get student familiar with dynamical and physical packages of meteorological models, chemical models and models for pollution transport. In addition, students obtain knowledge about measurement and simulation techniques, and widen their knowledge about convective mixing layer and boundary layer.				
Learning outcomes Experts with academic education who completed their knowledge in meteorology acquired during four years of studying. One has the skill to present results of research to other colleagues and wide audience. One is qualified to use known solutions for new problems and to understand mathematical and numerical methods. In addition, students are qualified to work in various scientific institutes, agricultural institutes and institutes for monitoring and environmental protection. One has the ability for independent work and further improvements.				
Syllabus Nonhydrostatic models. Dynamical package of models. Physical packages of model. Chemical models. Models for pollution transport. Measurement and simulation techniques. Sensors and measurement categories. List of sensors. Instrument platforms. Field experiments. Simulation methods. Convective mixed layer. Unstable surface layer. Mixing layer. Entrainment zone. Entrainment velocity and its parameterization. Subsidence and advection Stable boundary layer. Mean characteristics. Processes. Evolution. Other depth models. Low-level (nocturnal) jet. Gravity waves. Terrain slope and downward winds. Boundary layer clouds. Thermodynamics. Radiation. Cloud entrainment mechanisms. Fair-weather cumulus. Stratocumulus. Fog. Geographical effects. Geographically generated local winds. Geographically modified motions. Urban heat islands.				
Weekly teaching load				Other:
Lectures: 3	Exercises: 1	Other forms of teaching: 1	Student research:	