

Level: PhD				
Course title: Advanced course of physics of hydrosphere				
Status: elective				
ECTS: 15				
Requirements: completing the appropriate Masters degree				
Learning objectives Gaining knowledge of modern water systems on Earth and their effects on atmospheric processes. In addition, acquiring the knowledge of models in hydrology and oceanography.				
Learning outcomes Students gain the following knowledge, skills and competences: <ul style="list-style-type: none"> - The most recent achievements in the field of hydrology; - General ability to read professional literature; - Knowledge of the specifics of different water systems; - The ability of scientifically based understanding of the physical processes and interpretation of physical phenomena in these systems. 				
Syllabus <i>Theoretical instruction</i> Selected chapters in hydrology. Hydrological cycle. Infiltration and soil moisture. Parameters and processes influencing the soil moisture. Determination of the infiltration. Ground waters. Water motion through the soil. Equilibrium and non-equilibrium states. Drain. Selected chapters of oceanology. Basic equations. Parametrization of processes at the boundary between the atmosphere and the ocean. Baroclinic circulation of the ocean. Time dependent flows. <i>Practical instruction</i>				
Weekly teaching load				Other:
Lectures: 4	Exercises:	Other forms of teaching:	Student research: 6	