

Babeş-Bolyai University, Faculty of Geography
Resources and Risks in Hydro-Atmospheric Environment Master Program

Educational Program	Resources and Risks in Hydro-Atmospheric Environment
Degree Awarded	Master in Resources and Risks in Hydro-Atmospheric Environment
Standard Length of Studies (Number of ECTS Credits)	2 years – 4 semesters –, 120 + 10 = 130 ECTS
Type of Study	Full-time
Higher Education Institution	Babeş-Bolyai University
Faculty / Department	Faculty of Geography
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Profile of the Degree Program	Resources and Risks in Hydro-Atmospheric Environment degree program
Target Group / Addressees	Graduates in Geography, Environmental Science, Biology, Geology, Physics, Chemistry, Economics.
Entrance Conditions	The admission is based on the license thesis mark representing 50% of the final score, while the overall undergraduate average grade represents the remaining 50%.
Further Education Possibilities	The master program aims at providing students with the appropriate tools for further doctoral studies and to become professional experts in the field.
Description of Study	The master program in Resources and Risks in Hydro-Atmospheric Environment allows students to acquire fundamental knowledge and expertise in a multidisciplinary area. <i>Core courses:</i> Special Issues on Romania's Climate; Extreme Geographical Phenomena Epistemology; Hydrological Synthesis and Regionalization; Hydro-Climatic Resources and the Sustainable Development; Pollution and Protection of the Atmosphere; Satellite Observations in Environment Monitoring; Water Use and the Controlled Waters Discharge; Climatic Change and its Impact and Risk on the Environment; Pollution and Protection of the Hydrosphere; Maximum Run-off Risk and High-floods Calculation; Weather Forecast Methods; Hydrological Forecast Methods; Climatic Data Basis Storage, Management and Use; Climatology of the Entertainment Activities; Dynamic Meteorology; Evaluation Methods on Hydro-tourist Resources; Statistical and Dynamical Hydrology; Urban Hydrology; GIS Techniques for Projects and Risk Analysis.
Purposes of the Program	The program provides an advance level training in theoretical and practical meteorology-climatology and hydrology.
Specialization / Area of Expertise	The curriculum of this program provides basic training in an area of great interest, both theoretical and especially practical: Atmosphere and Hydrological Environment Monitoring; Hydro-climatic Resources Evaluation and Use; Management of the Emergency Situations Caused by Hydro-Climatic Hazards.

Extra Peculiarities	-
Practical Training	Practical classes take places in the specialized labs in the Faculty of Geography and in the specialized institutions in Cluj: „Transilvania Nord” Regional Weather Center, „Someș-Tisa” Water Branch, „Someș” Water Company, Environmental Protection Agency, „Hidroelectrica” Company.
Final Examinations	Research master thesis
Gained Abilities and Skills	<p><i>General Skills:</i></p> <ul style="list-style-type: none"> - knowledge of the regime of meteorological and hydrological parameters depending on geographical location and particularities; - understanding of the importance of weather and rivers monitoring and forecasts for hydro-climatic hazards mitigation; - knowledge of the European and international regulations on protection of the Atmosphere and Hydrosphere. <p><i>Operational skills:</i></p> <ul style="list-style-type: none"> - knowledge capacity to make various land specific applications (measurements and meteorological and hydrological observations, topometrical and bathimetical measurements, installation and operation of automated stations, etc.), using the latest generation equipments and GPS technology; - knowledge capacity to perform various specific office applications (primary processing of the result data, preparation of meteorological and hydrological annual studies, thematic synthesis and regionalization achievements etc.); - knowledge capacity to use GIS applications for climatic and hydrological analysis, classification and modeling using digital databases and satellite images; - ability to develop specific thematic projects basis on request of various customers as local authorities or private companies; - ability to develop communication with specialized institutions in Atmosphere and Hydrosphere monitoring.
Job Placement, Potential Field of Professional Activity	The course is designed to provide students main abilities required for a career in operational and research activities in Meteorology-Climatology, Hydrology, Environment and meteorology and hydrology - related professions. Thus, the graduated may be hired by: water branches, weather and hydrological stations, environment agencies, weather forecast centers, sounding data collection stations, green energy power plants, water and sewage plants, local administrative authorities, emergency situations inspectorates, etc.

Date: October 28, 2010

Signature: Assoc. Prof. PhD. Florin Moldovan