University of Colorado **Boulder**

Hydrologic Sciences Graduate Program

CERTIFICATE AND SUBPLAN APPLICATION

Please complete the following form and email it to the Program Coordinator at hydrogrd@colorado.edu.

Name	_____ *Last* _____ *First* _____ *M.I.*	Date	_____
Program	_____ *Home department* _____ *MS/MA/PhD*	Email	_____
Expected Graduation Date	_____	Student ID number	_____
Faculty Advisor	_____		
Thesis or Dissertation Topic	_____		
Student signature	_____	PhD students in ATOC, EBIO, ENVS, GEOG, GEOL: indicate certificate or subplan	
Faculty advisor signature	_____	_____	

Statement of research interests in hydrologic sciences. 150-200 words.

Plan for Required Courses

List A		List B	
Semester		Semester	
Elective 1		Semester	
Elective 2		Semester	
Elective 3		Semester	

The Hydrologic Sciences certificate and subplan require five courses: one course from List A, one course from List A or B, and three electives, for a total of 15 credits. A complete description of the requirements and updated course lists may be found on the Hydrologic Sciences Program website. The course lists are reviewed annually by the Program Steering Committee. If a student seeks a substitution or a request to add a course to the curriculum, email the petition to the Program Coordinator. *N.B.* Substitutions for List A and List B courses are not considered.

Required Courses	Title	Credit Hours
List A Quantitative Skills		
ATOC 5050	Atmospheric Thermodynamics and Dynamics	3
ATOC 5060	Dynamics of the Atmosphere and Oceans	3
CVEN 5313	Environmental Fluid Mechanics	3
CVEN 5353	Groundwater Hydrology	3
CVEN 5464	Environmental Engineering Processes	3
GEOL 5080	Advanced Hydrogeology and Modeling Concepts	3
GEOL 5110	Geomechanics	3
List B Introduction to a Hydrologic Science		
ATOC 5051	Introduction to Physical Oceanography	3
ATOC 5061	Advanced Ocean Dynamics and Air-Sea Coupled ENSO Mechanisms	3
CVEN 5333	Physical Hydrology	3
CVEN 5404	Water Chemistry	3
GEOG 5251	River Systems and Landforms (also GEOG 5241 Fluvial Geomorphology)	3-4
GEOG 5321	Snow Hydrology	3-4

2025-2026 elective list	Title	Credit Hours
ATOC 5200	Biogeochemical Oceanography	3
ATOC 5235	Introduction to Atmospheric Radiative Transfer and Remote Sensing	3
ATOC 5500	Special Topics in ATOC [Field Observations and Measurements]	1-3
ATOC 5550	Mountain Meteorology	3
ATOC 5600	Physics and Chemistry of Clouds and Aerosols	3
ATOC 5730	Physical Oceanography and Climate	3
ATOC 5750	Desert Meteorology and Climate	3
ATOC 5850	Numerical Methods Laboratory	
CHEM 5141	Environmental Water and Soil Chemistry	3
CVEN 5122	The Colorado River Crisis: Water Policy, Hydrological Variability, and Climate Change	3
CVEN 5323	Applied Stream Ecology	3
CVEN 5343	Transport and Dispersion in Surface Water	3
CVEN 5363	Modeling of Hydrologic Systems	3
CVEN 5383	Applied Groundwater Modeling	3
CVEN 5404	Water Chemistry	3
CVEN 5424	Environmental Organic Chemistry	3
CVEN 5454	Statistical Methods for Natural and Engineered Systems	3
CVEN 5537	Numerical Methods in Civil Engineering	3
CVEN 5833	Hydroscience Topics [including: Nonpoint Source Pollution, Surface-Groundwater Exchanges, Analysis of Urban Water Systems, Environmental Transport and Dispersion Processes]	3
EBIO 5030	Limnology	3
ENVS 5840	Global Biogeochemical Cycles	3
GEOG 5023	Advanced Quantitative Methods for Spatial Data	4
GEOG 5093	Remote Sensing of the Environment	4
GEOG 5241	HydroScience topics [including: Watershed Biogeochemistry, Mountain Hydrology, Snow from Space, Adv in Measuring Mtn Snowpack]	3
GEOG 5271	The Arctic Climate System	3
GEOG 5303	Geographic Information Science: Spatial Programming	4
GEOG 5463	Earth Analytics Date Science Bootcamp [Main Campus section]	
GEOL 5093	Remote Sensing of the Environment	4
GEOL 5270	Marine Chemistry and Geochemistry	3
GEOL 5280	Aqueous and Environmental Geochemistry	3
GEOL 5305	Global Biogeochemical Cycles	3
GEOL 5430	Paleoceanography and Paleoclimatology	3
GEOL 5700	HydroScience topics [including: Terrestrial Hydrology, Sedimentary Modeling]	2-4
GEOL 5721	Classics and Frontiers in Hydrological Science	2