



CCET 4840 - Advanced Hydrology

Fall 2026 Syllabus, Section 01, CRN 43950,

Credit hours: 3

Instructor

Robert Korenic

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Public Instructor Information

Instructor Title: Professor

Instructor Professional Qualifications:

Master of Science in Civil Engineering, Youngstown State University, 1999

Bachelor of Engineering in Civil Engineering, Youngstown State University, 1997

Instructor Office Location: Moser Hall Room 4132

Instructor Office Phone: 330-941-3288

Course Description

4840. Advanced Hydrology. Advanced techniques of hydrology and hydraulics. Ground water movement principles, flow-nets, fluid potential, water balances, well hydraulics and detention pond design included. The course includes advanced use of Civil 3D Hydraflow Express in conjunction with traditional storm routing techniques. Prereq.: CCET 3724. 3 s.h.

Course Readings

Group	Title	Author	ISBN
	No readings.		

Course reading material will be provided by instructor.

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Schedule of Topics and Assignments

Week of	Proposed Topic	Due/To Prepare for Class
8/25	Intro and Water Balance	
9/1	Aquifers, Porosity and Darcys Law	
9/8	Hydraulic Head and Fluid Potential	
9/15	Continuity and Flow Net	
9/22	GW Flow Patterns	
9/29	Ground Water-Surface Water Interaction	
10/6	Ground Water Storage	
10/13	Pump tests and analysis	
10/20	Numerical Modeling of GW Flow	
10/27	Superposition	
11/3	Solute Transport in GW	
11/10	Storm water detention and design	
11/17	Storm water detention and design	
11/24	Hydraflow Express/project	

12/1	Hydraflow Express/project
12/8	Hydraflow Express/projects

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.