

NR 5884 Urban Water Systems
Offered: Summer (12-week) Semester

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REQUIRED TEXT: Readings will be provided by the instructor.

COURSE DESCRIPTION:

Water is the lifeblood of cities. The earliest cities organized around a need to manage water. Freshwater, wastewater, and environmental water systems each provide vital services, and each can cause profound problems in its turn. Freshwater supply is needed for citizens to live and for industry to work. Insufficient or contaminated water causes urban activity to come to a halt. Equally important is managing and treating wastewater; without good sewage systems, cities quickly become unhealthy, fetid places. And yet many global cities have substandard wastewater management. Environmental water is essential, not only for its contribution to human water use, but also as a key element in the urban ecosystem. Imbalances in environmental water can cause degradation, drought, and fire or, conversely, catastrophic flooding.

This course looks at urban water systems as an integrated management challenge. It adopts a case study approach to identify emerging problems and envision potential solutions. Case studies draw from the North American context as well as from global cities, especially in rapidly developing countries. Urban water systems, while centrally urban, in fact, are connected to the regional landscape.

Learning Outcomes:

Upon completing this course, students will:

- Understand the global significance of urban water
- Define sustainable, integrated urban water systems
- Prescribe best practices to address emerging problems
- Understand key hydrologic principles and how they apply to urban environments