

CIVE 544 — Water Resources Planning and Management

Solutions to complex problems in a changing world

FALL 2019: 2:00 – 2:50 MWF (B4 Engineering)

Global water resources are under relentless pressure from development, pollution, and climate shifts. Billions are threatened by unsafe water, drought, floods and failure of aging and deteriorating water systems. To respond to these challenges, the course focuses on integrated solutions based on technology, management and governance for sustainable water management. It prepares advanced undergraduates and graduate students in engineering, science, or management fields for work across the water industry. Case studies and student presentations address a range of global water issues as well as U.S. and Colorado water issues.

TOPICS

- Water resources management principles
- Natural water systems and sustainable development
- Water management infrastructure
- Planning, decision-making, modeling, and conflict resolution
- Water economics, efficiency and value models
- Water and environmental laws and regulatory systems
- Financial management in the water industry
- Water as a business activity
- Large-scale water problems
- River basin planning and coordination
- Trans-boundary issues, hydro-diplomacy, and water treaties
- Droughts, floods, disasters, and water security
- Water quality and public health
- Management of estuaries, fisheries and coastal waters
- Water, poverty, and social equity
- Water problem cases around the world

Instructor: Neil S. Grigg, Civil and Environmental Engineering.

Textbooks: Water Manager's Handbook: A Guide to the Water Industry; Web-based materials including chapters from Total Water Management and Water Governance.