CVEN 5574 Water Utility Management: Current Issues and Future Challenges

Summer Syllabus 2015
(June 2-July 2)

FACULTY:

Richard Kuchenrither, Ph.D., P.E.
Scholar in Residence
Director, Water Engineering and Management, Dept. CEAE

Tanya Heikkila, Ph.D.
Associate Professor, School of Public Affairs

Bob Allen
Division Manager, Public Works & & Natural Resources Operations,
City of Longmont

John Gallagher, P.E.
VP, Raftelis Financial Consultants, Inc.

Jerry Forte, P.E.
CEO, Colorado Spring Utilities

Brian Good
Deputy Manager, Denver Water

Karen Pallansch, P.E.
CEO, Alexandria Renew Enterprise

Elisa Speranza
Chief Communications Officer, CH2M HILL

Bill Stannard, P.E.
President/CEO, Raftelis Financial Consultants, Inc.

Ralph Eberts, P.E.
Executive Vice President, Black & Veatch

Scott Summer, Ph.D.
Professor, Dept. CEAE

JoAnn Silverstein, Ph. D., P,E.
Professor, Dept. CEAE

OFFICE:  ECOT  541 E
Email:  richard.d.kuchenrither@colorado.edu

CLASS MEETS:  Tues, Wed., & Thurs.  9:00 – 12:20; 6/2 to 7/2
Room ECCS 1B28

OFFICE HOURS:  By appointment
READINGS:

Required Texts

Articles and book chapters to be made available in D2L:
COURSE DESCRIPTION AND OBJECTIVES

Description. The three trends in the environmental profession that underlies the needs and opportunities for the course: (1) changing professional and educational demands, (2) increasing need for civil engineers and water professionals to meet future demand for leaders in the water profession and society, and (3) retirement of a significant fraction of the water professional workforce over the next decade.

The unique aspect of the class is integrated graduate study of advanced study in technology challenges and public affairs (leadership/management/communication/finance) to prepare students for careers in consulting firms, public water and wastewater utilities and other government agencies focused on management of water and environmental resources. The faculty includes Civil Engineering Department, School of Public Affairs and senior management from utilities and consulting engineering firms.

Objectives.

The course objectives include: learning how public utilities manage water supply and environmental services; how they work with their constituencies and each other; and what leadership is required to meet future challenges. Also, a unique sustainable and renewable case study is an opportunity for students to apply the course principles for implementation.

The course is to focus on many of the humanistic challenges for consulting, utility and regulatory agencies.

The key course objectives:

- Renewable and Sustainability Case Study
- Workshops for Current Issues & Future Challenges
  - Career’s in the Water Profession
  - Global Water Resources
  - Water Project Delivery Options
  - Future Technology Challenges- Nexus of Water & Energy
  - Future Regulatory Challenges – Regulatory Soup
- Communication
  - Inside and outside of the utility with the public, boards and city councils
- Ethics/Leadership/Management
  - Ethics cover leadership and management
  - Differences between leadership and management
- Governance
  - Controlled by Public Boards and City Council.
  - Privately owned utilities
- Financial
  - Utility Business Models
  - Affordability
  - Future of Water Financing
COURSE WORK:

*Homework*  Regular assignments
*Project*  See Below

GRADING

Homework Assignments  40%
Project  60%

Grading Criteria and Expectations

- Ability to follow instructions and format assignments clearly
- On-time submission of assignments
- Error free spelling and grammar
- Clarity of written or verbal analyses
  - (e.g. defining key concepts, using evidence and support from course readings and outside research)
- Content that demonstrates your knowledge of the topic and provides in-depth coverage of the required points
- Class attendance includes: in class, symmetrical and asymmetrical. Asymmetrical attendance will be measured through D2L. **Missing a class will reduce the final grade.**

SCHEDULE AND TOPICS

#1  6/2 Water Management: Water, Wastewater, and Reuse
  Faculty: Dick Kuchenrither, Brian Good, Perry Holland

- Course Introduction and Objectives  **Dick**
- Class Project Denver Water & Metro Wastewater Reclamation Plants  **Brian & Perry**
  - Plant Backgrounds Presentations
  - Project Data
  - Carbon footprint, individually and combined
  - Carbon Credits
  - CO₂ reduction
  - AT Analysis
  - Plant tours on Friday

Readings: WEF Chapters 1 & 2; Project Description
#2 6/3 Workshop: Career’s in the Water Profession
Faculty: Dick Kuchenrither,
- Topics
  - Past experience in water profession
  - Current experience
  - New era in the water profession
- Presentations/ Panel Discussion

Readings:

#3 6/4 History of Water & Environment Services
Faculty: Dick Kuchenrither, JoAnn Silverstein
- Water History
- Project Team meetings

Readings:
  - WEF Chapter #1
  - *Dreams of Iron and Steel*, Chapter 4, London Sewers

#4 6/9 Workshop: Global Water Century: Looking Ahead 100 Years
Faculty: Dick Kuchenrither, Tanya Heikkila
- Topics for looking ahead 100 years from now
  - Global climate change and water supply
  - Water supply impacts
  - Global sanitation, hygiene & water
- Presentations/ Panel Discussion

Readings:
# 6/10 Leadership
Faculty: Dick Kuchenrither, Karen Pallansch and Jerry Forte

- Differences between leadership & management  
  Dick
- Styles of leadership and challenges  
  Karen
- Leadership attributes  
  Karen/ Dick
- Culture of honor & respect  
  Jerry

Readings:
1. WEF Chapter 3;

# 6/11 Leadership
Faculty: Dick Kuchenrither, Jerry Forte and Karen Pallansch

- 7 Keys to true success  
  Jerry
- Improving leadership skills  
  Karen
- Leadership Failure  
  Dick

Readings
1. WEF Chapters 3 and 5;

*********************************************************************************
****
*********************************************************************************

# 6/16 Workshop: Water Project Delivery Options
Faculty: Dick Kuchenrither, Tanya Heikkila

- Topics
  - Traditional Bidding
  - Design Build
  - Design Build Operate
  - Guaranteed Price
  - Public- private partnership
- Presentations/ Panel Discussion

Readings:
#8 6/17 Management Challenges
Faculty: Dick Kuchenrither, Bob Allen, and Ralph Eberts

- Key Elements of Management Ralph
- Personal Time Management Dick
  - Covey Quadrant Dick
- Meeting time management Bob

Readings:
1. WEF Chap 5;
3. *Stop Wasting Valuable Time*. Mankins, Michael

#9 6/18 Management Challenges
Faculty: Dick Kuchenrither, Bob Allen and Ralph Eberts

- Governance Dick
- Asset Management Bob
- Managing Water International and U.S. Projects (Non-technical paths) Ralph

Readings:
1. Asset Management for Local Officials (USEPA)
2. Asset Management Overview (USDOT)
3. RCM Guide

#10 6/23 Workshop: Future Technology Challenges- Nexus of Water & Energy
Faculty: Dick Kuchenrither, Brian Good

- Topics/Participants
  - Existing technologies
  - Developing technologies
  - Future technologies
- Presentations/ Panel Discussion

Readings:
#11 6/24 Value-based Decision Making
Faculty: Dick Kuchenrither, Elisa Speranza and Bob Harberg
- Code of Ethics  Elisa
- Public Involvement & Communication Case Studies  Bob
- Ethics in Leadership & Management  Dick
- Environmental Justice  Dick
- Ethics in Leadership  Dick

Readings:
1.  *Meeting the Ethical Challenges of Leadership*, Chapter 3, p. 77 to 104, Johnson, Craig E

#12 6/25 Challenges of Communication
Faculty: Dick Kuchenrither, Brian Good
- Media Communication  Brian & Channel 7
- St Louis Interview or Denver Metro Formation  Dick

Reading:

#13 6/30 Workshop: Future Regulatory Challenges - Regulatory Soup
Faculty: Dick Kuchenrither, Barbara Biggs, JoAnn Silverstein

- Topics
  - Integrated Water Resources (drinking water, wastewater, & reuse)
  - Wastewater & Water
  - New Era
- Presentation/ Panel Discussion

Reading:
#14 7/1 Challenges of Utility Finance
Faculty: Dick Kuchenrither, John Gallagher and Bill Stannard

- Utility Financial Basics/ Business Models  
  John
- Affordability  
  Dick
- Future of Water Financing  
  Bill

Readings:
1. WEF Chap 6
2. AWWA “Buried No Longer”

#15 7/2 Class Project Reports/ Final

ADDITIONAL INFORMATION

CU Policy Statements
All of CU’s Policy statements are important for this class. Please become familiar with the CU policies at [http://www.colorado.edu/policies/](http://www.colorado.edu/policies/) and take particular note of those policies listed below. Please do not hesitate to ask me for clarification about how any of these policies relate to our class.

(1) The Boulder Provost’s Disability Task Force recommended syllabus statement:

If you qualify for accommodations because of a disability, please submit to your professor a letter from Disability Services in a timely manner (for exam accommodations provide your letter at least one week prior to the exam) so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact Disability Services at 303-492-8671 or by e-mail at dsinfo@colorado.edu.

If you have a temporary medical condition or injury, see Temporary Injuries under Quick Links at Disability Services website ([http://disabilityservices.colorado.edu/](http://disabilityservices.colorado.edu/)) and discuss your needs with your professor.

(2) It is the responsibility of every instructor to clearly explain his or her procedures about absences due to religious observances in the course syllabus so that all students are fully informed, in writing, near the beginning of each semester’s classes. Campus policy regarding religious observances states that faculty must make reasonable accommodation for them and in so doing, be careful not to inhibit or penalize those students who are exercising their rights to religious observance. Faculty should be aware that a given religious holiday may be observed with very different levels of attentiveness by different members of the same religious group and thus may require careful consideration to the particulars of each individual case. See [http://www.colorado.edu/policies/fac_relig.html](http://www.colorado.edu/policies/fac_relig.html)

If you have questions about providing students with religious accommodations, please contact the Office of Discrimination and Harassment at 303–492-2127.

A comprehensive calendar of the religious holidays most commonly observed by CU-Boulder students is at [http://www.interfaithcalendar.org/](http://www.interfaithcalendar.org/)
Recommended syllabus statement:

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, {{insert your procedures here}}

See full details at [http://www.colorado.edu/policies/fac_relig.html](http://www.colorado.edu/policies/fac_relig.html)

(3) Faculty and students should be aware of the campus ‘Classroom Behavior’ policy at [http://www.colorado.edu/policies/classbehavior.html](http://www.colorado.edu/policies/classbehavior.html) as well as faculty rights and responsibilities listed at [http://www.colorado.edu/FacultyGovernance/policies/Professional_Rights_and_Duties.pdf](http://www.colorado.edu/FacultyGovernance/policies/Professional_Rights_and_Duties.pdf)

These documents describe examples of unacceptable classroom behavior and provide information on how to handle such circumstances should they arise. Faculty are encouraged to address the issue of classroom behavior in the syllabus.

Recommended syllabus statement:

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, color, culture, religion, creed, politics, veteran’s status, sexual orientation, gender, gender identity and gender expression, age, disability, and nationalities. Class rosters are provided to the instructor with the student’s legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. See policies at [http://www.colorado.edu/policies/classbehavior.html](http://www.colorado.edu/policies/classbehavior.html) and at [http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code](http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code)

(4) The Office of Discrimination and Harassment recommends the following syllabus statement:

The University of Colorado Boulder (CU-Boulder) is committed to maintaining a positive learning, working, and living environment. The University of Colorado does not discriminate on the basis of race, color, national origin, sex, age, disability, creed, religion, sexual orientation, or veteran status in admission and access to, and treatment and employment in, its educational programs and activities. (Regent Law, Article 10, amended 11/8/2001). CU-Boulder will not tolerate acts of discrimination or harassment based upon Protected Classes or related retaliation against or by any employee or student. For purposes of this CU-Boulder policy, "Protected Classes" refers to race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, or veteran status. Individuals who believe they have been discriminated against should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Student Conduct (OSC) at 303-492-5550. Information about the ODH, the above referenced policies, and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at [http://hr.colorado.edu/dh/](http://hr.colorado.edu/dh/)

(5) The Boulder campus has a student Honor Code and individual faculty members are expected to familiarize themselves with its tenets and follow the approved procedures should violations be perceived. The Honor Council recommended syllabus statement:
All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-735-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Other information on the Honor Code can be found at http://www.colorado.edu/policies/honor.html and at http://honorcode.colorado.edu