
CIVE572: ANALYSIS OF URBAN WATER SYSTEMS

INSTRUCTOR INFORMATION

Instructor: Dr. Bhaskar

Email: aditi.bhaskar@colostate.edu

Phone: 970-491-8339

Pronouns: she/her

Communication Policy: To ask questions: (1) Subscribe to and post on the Canvas discussion board or (2) attend office hours. If the question is of a personal nature, email me at aditi.bhaskar@colostate.edu with CIVE572 in the subject line.

OFFICE HOURS

Office hours are from 2-3 pm on Thursdays or by appointment on Zoom at:

<https://zoom.us/j/99555950330?pwd=Rk9LRWYrQk90WGFUR2Z1VFEwdkhFZz09>.

PREREQUISITES FOR COURSE

CIVE 300 and CIVE 401.

COURSE DESCRIPTION & OBJECTIVES

The course examines water systems in the urban environment in an integrated manner rather than in isolation. Subjects emphasized are the intersection of water supply, wastewater collection, stormwater management, groundwater, and surface water. Focus is placed on analyzing the behavior of urban water distribution and collection systems using model applications. Students completing this course will be able to understand local urban water resources problems, effectively use complementary urban water models, and examine the interactions between water supply, drainage systems, surface water, and groundwater.

Upon the completion of this course, students will be able to:

1. Describe relationships between water infrastructure and the environment.
2. Demonstrate the relationship between urban water policy and water use.
3. Use statistics to describe how streamflow changes urbanization.
4. Develop models for water distribution systems
5. Appraise approaches to urban water demand management.
6. Develop models for stormwater drainage systems
7. Analyze primary information from journal articles related to urban water

TENTATIVE SCHEDULE

Week	Topic	Discussion and lab
1	Introduction (Chapter 1) and Urban Water Cycle	<i>Grimmond and Oke (1986)</i>
2	Governance and Urban Water Planning (Chapter 2)	<i>Hopkins et al. (2015)</i>
3	Urban Water Hydrology (Chapter 3)	Streamflow Analysis
4		<i>Manago and Hogue (2017)</i>
5	Urban Water Supply and Demand (Chapter 4)	EPANET Analysis
6		EPANET Analysis
7	Urban Water Demand Management (Chapter 5)	Demand Analysis <i>Kenney et al. (2004)</i>
8		IUWM Analysis
9	Urban Water Drainage Systems (Chapter 6)	SWMM Analysis <i>Emerson et al. (2005)</i>
10	Urban Water Drainage Systems (Chapter 6)	SWMM Analysis
11		SWMM Analysis
12		I/I Analysis
13		<i>Christian et al. (2011)</i>
14	Environmental Impacts of Urbanization (Chapter 7)	CSO Analysis
15	Special Topics	Final Project Analysis

TEXTBOOK / COURSE READINGS

Available through CSU e-Course Reserves on Canvas: Urban water engineering and management. Karamouz, Mohammad, Ali Moridi, and Sara Nazif. CRC Press, 2010.

Selected journal articles and other readings will be distributed via Canvas.

COURSE MATERIALS & EQUIPMENT

We will use Microsoft Office products and freely available software from EPA. Install the latest version of EPANET (<https://www.epa.gov/water-research/epanet>) and EPA SWMM 5.1.015 (<https://www.epa.gov/water-research/storm-water-management-model-swmm>).

PARTICIPATION/BEHAVIORAL EXPECTATIONS

Please review the [core rules of netiquette](#) for some guidelines and expectations on how to behave in an online learning environment.

GRADING POLICY

Plus/minus grading will NOT be used for this course.

Grade	Range
A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	0-59%

ASSIGNMENT	GRADE PERCENTAGE
Assignments	75%
Quizzes	15%
Participation	10%
Total:	100 %

*Keep a copy of all work created for the course, including work submitted through Canvas course learning management system.

Homework Deadlines: Without an approved extension, homework will be penalized by 20% after 24 hours, with a maximum late submission time of 7 days after the deadline.

ACADEMIC INTEGRITY & CSU HONOR PLEDGE

This course will adhere to the CSU [Academic Integrity/Misconduct](#) policy as found in the General Catalog and the [Student Conduct Code](#).

Academic integrity lies at the core of our common goal: to create an intellectually honest and rigorous community. Because academic integrity, and the personal and social integrity of which academic integrity is an integral part, is so central to our mission as students, teachers, scholars, and citizens, I will ask that you affirm the CSU Honor Pledge as part of completing your work in this course.

Further information about Academic Integrity is available at [CSU's Academic Integrity - Student Resources](#).

The use of online solution/tutor websites and content are not permitted for the reference or completion of any graded content in this course. The banned solution/tutor websites include, but not limited to, Chegg, NoteHall, Quizlet, Koofers, and other posted textbook solutions. Please reach out to Dr. Bhaskar to discuss if a specific service you are thinking about using for this course is acceptable.

Use of these online solution/tutor websites for the reference or completion of any graded content will be considered receiving unauthorized assistance and, therefore, is cheating and a violation of the CSU Student Conduct Code. Using them may result, at the discretion of the instructor, in a zero for the course, assignment, quiz, or exam. All incidents of this type will be referred to the CSU Student Resolution Center and may be subject to additional University disciplinary action.

INFORMATION ON COVID-19

All students are required to follow public health guidelines in any university space, and are encouraged to continue these practices when off-campus(es). Students also are required to report any COVID-19 symptoms to the university immediately, as well as if they have potentially been exposed or have tested positive at a non-CSU testing location. If you suspect you have symptoms, please fill out the COVID Reporter (<https://covid.colostate.edu/reporter/>). If you have COVID symptoms or know or believe you have been exposed, it is important for the health of yourself and others that you complete the online COVID Reporter. Do not ask your instructor to report for you; if you report to your instructor that you will not attend class due to symptoms or a potential exposure, you are required to also submit those concerns through the COVID Reporter. If you do not have access to the internet to fill out the online COVID-19 Reporter, please call (970)491-4600.

If you report symptoms or a positive test, your report is submitted to CSU's Public Health Office. You will receive immediate, initial instructions on what to do and then you will also be contacted by phone by a public health official. Based on your specific circumstances, the public health official may:

- choose to recommend that you be tested and help arrange for a test
- conduct contact tracing
- initiate any necessary public health requirements or recommendations and notify you if you need to take any steps

If you report a potential exposure, the public health official will help you determine if you are at risk of contracting COVID.

For the latest information about the University's COVID resources and information, please visit the CSU COVID-19 site (<https://covidrecovery.colostate.edu/>).

CANVAS INFORMATION & TECHNICAL SUPPORT

Canvas is the where course content, grades, and communication will reside for this course.

- Login: canvas.colostate.edu
- Support: info.canvas.colostate.edu
- For passwords or any other computer-related technical support, contact the [Central IT Technical Support Help Desk](#).
 - (970) 491-7276
 - help@colostate.edu

The [Technical Requirements](#) page identifies the browsers, operating systems, and plugins that work best with Canvas. If you are new to Canvas quickly review [the Canvas Student Orientation](#) materials.

UNIVERSAL DESIGN FOR LEARNING/ACCOMMODATION OF NEEDS

I am committed to the principle of universal learning. This means that our classroom, our virtual spaces, our practices, and our interactions be as inclusive as possible. Mutual respect, civility, and the ability to listen and observe others carefully are crucial to universal learning.

If you are a student who will need accommodations in this class, please contact me to discuss your individual needs. Any accommodation must be discussed in a timely manner. A verifying memo from [The Student Disability Center](#) may be required before any accommodation is provided.

The Student Disability Center (SDC) has the authority to verify and confirm the eligibility of students with disabilities for the majority of accommodations. While some accommodations may be provided by other departments, a student is not automatically eligible for those accommodations unless their disability can be verified and the need for the accommodation confirmed, either through SDC or through acceptable means defined by the particular department. Faculty and staff may consult with the SDC staff whenever there is doubt as to the appropriateness of an accommodative request by a student with a disability.

The goal of SDC is to normalize disability as part of the culture of diversity at Colorado State University. The characteristic of having a disability simply provides the basis of the support that is available to students. The goal is to ensure students with disabilities have the opportunity to be as successful as they have the capability to be.

Support and services are offered to student with functional limitations due to visual, hearing, learning, or mobility disabilities as well as to students who have specific physical or mental health conditions due to epilepsy, diabetes, asthma, AIDS, psychiatric diagnoses, etc. Students who are temporarily disabled are also eligible for support and assistance.

Any student who is enrolled at CSU, and who self-identifies with SDC as having a disability, is eligible for support from SDC. Specific accommodations are determined individually for each student and must be supported by appropriate documentation and/or evaluation of needs consistent with a particular type of disability. SDC reserves the right to ask for any appropriate documentation of disability in order to determine a student's eligibility for accommodations as well as in support for specific accommodative requests. The accommodative process begins once a student meets with an accommodations specialist in the SDC.

THIRD-PARTY TOOLS/PRIVACY

Please note that this course may require you to use third-party tools (tools outside of the Canvas learning management system), such as Skype and others. Some of these tools may collect and share information about their users. Because your privacy is important, you are encouraged to consult the privacy policies for any third-party tools in this course so that you are aware of how your personal information is collected, used and shared.

COPYRIGHTED COURSE MATERIALS

Please do not share material from this course in online, print, or other media. Course material is the property of the instructor who developed the course. Materials authored by third parties and used in the course are also subject to copyright protections. Posting course materials on external sites (commercial or not) violates both copyright law and the CSU Student Conduct Code. Students who share course content without the instructor's express permission, including with online sites that post materials to sell to other students, could face appropriate disciplinary or legal action.

UNDOCUMENTED STUDENT SUPPORT

Any CSU student who faces challenges or hardships due to their legal status in the United States and believes that it may impact their academic performance in this course is encouraged to visit [Student Support Services for Undocumented, DACA & ASSET](#) for resources and support. Additionally, only if you feel comfortable, please notify your professor so they may pass along any additional resources they may possess.

TITLE IX/INTERPERSONAL VIOLENCE

For the full statement regarding role and responsibilities about reporting harassment, sexual harassment, sexual misconduct, domestic violence, dating violence, stalking, and the retaliation policy please go to: [Title IX – Sexual Assault, Sexual Violence, Sexual Harassment](#).

If you feel that your rights have been compromised at CSU, several resources are available to assist:

- Student Resolution Center, 200 Lory Student Center, 491-7165
- Office of Equal Opportunity, 101 Student Services, 491-5836

A note about interpersonal violence: If you or someone you know has experienced sexual assault, relationship violence and/or stalking, know that you are not alone. As instructors, we are required by law to notify university officials about disclosures related to interpersonal violence. Confidential victim advocates are available 24 hours a day, 365 days a year to provide support related to the emotional, physical, physiological and legal aftermath of interpersonal violence. Contact the Victim Assistance Team at: 970-492-4242.

RELIGIOUS OBSERVANCES

CSU does not discriminate on the basis of religion. Reasonable accommodation should be made to allow individuals to observe their established religious holidays. Students seeking an exemption from attending class or completing assigned course work for a religious holiday will need to fill out the [Religious Accommodation Request Form](#) and turn it in to the Division of Student Affairs, located on the second level of the Administration building.

Once turned in, the Division of Student Affairs will review the request and contact the student accordingly. If approved, the student will receive a memo from the Dean of Students to give to their professor or course instructor.

Students are asked to turn in the request forms as soon as the conflict is noticed. Similarly, unanticipated conflicts requiring a religious observance, such as a death in the family, can also be reviewed.

CSU PRINCIPLES OF COMMUNITY

Inclusion: We create and nurture inclusive environments and welcome, value and affirm all members of our community, including their various identities, skills, ideas, talents and contributions.

Integrity: We are accountable for our actions and will act ethically and honestly in all our interactions.

Respect: We honor the inherent dignity of all people within an environment where we are committed to freedom of expression, critical discourse, and the advancement of knowledge.

Service: We are responsible, individually and collectively, to give of our time, talents, and resources to promote the well-being of each other and the development of our local, regional, and global communities.

Social Justice: We have the right to be treated and the responsibility to treat others with fairness and equity, the duty to challenge prejudice, and to uphold the laws, policies and procedures that promote justice in all respects.

DIVERSITY AND INCLUSION

The [Mission, Vision, and Focus](#) webpage of the Vice President for Diversity includes a comprehensive statement of CSU's commitment to diversity and inclusion.

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