
CIVE322: BASIC HYDROLOGY

COURSE INFORMATION

Mandatory, synchronous class will be held on Zoom on Monday and Wednesday from 10-10:50 AM at <https://zoom.us/j/98185129144?pwd=Vk81YnZ3TTc2TFJ2Z2Y5cGJZMFozZz09>.

INSTRUCTOR INFORMATION

Instructor: Dr. Bhaskar

Email: aditi.bhaskar@colostate.edu

Phone: 970-491-8339

Pronouns: she/her

Office Hours: Fridays from 10-10:50 AM at the same Zoom link above.

Communication Policy: To ask questions outside of class time: (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 CIVE322 in the subject line.

PREREQUISITES FOR COURSE

Fluid Mechanics (CIVE 300 or CBE 331 or WR 416) and Engineering Systems and Decision Analysis (CIVE 203 or STAT 301 or STAT 315).

COURSE DESCRIPTION & OBJECTIVES

This course covers the basic hydrologic concepts of the hydrologic cycle, probability and statistics in hydrology, precipitation, infiltration and soil moisture, runoff processes, stream and reservoir routing, with applications in water resources and environmental engineering.

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

1. Compute water balances
2. Conceptualize rainfall mechanisms
3. Analyze rainfall data
4. Develop design storms
5. Explain infiltration and runoff mechanisms
6. Apply infiltration models
7. Interpret streamflow data
8. Explain the origins of baseflow.
9. Apply baseflow separation methods
10. Apply unit hydrographs and related transformation methods
11. Implement river routing methods

12. Implement reservoir routing methods
13. Compute evaporation

COURSE MODULES

1. Introduction
2. Probability and Statistics
3. Precipitation

Midterm 1 Tentative Date: October 7, 2020

4. Losses and Excess Precipitation
5. Streamflow Response to Excess Precipitation

Midterm 2 Tentative Date: November 11, 2020

6. Routing the Streamflow Response Downstream
7. Periods Between Storms
8. Special Topics

TEXTBOOK / COURSE READINGS

Hydrologic Analysis and Design, Fourth Edition, by Richard H. McCuen (Pearson 2016) is the optional textbook. Selected chapters of this text will be provided as e-Reserves through the CSU Library. Other course readings will be provided on Canvas.

PARTICIPATION/BEHAVIORAL EXPECTATIONS

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

COURSE POLICIES (LATE ASSIGNMENTS, MAKE-UP EXAMS, ETC.)

Exams: Make-up exams will be given only for university-approved excuses or when you have a note from a medical professional.

Student Collaboration: I encourage students to work and study together to complete homework assignments, however each student is responsible for completing and submitting their own work. Copied work/answers will be identified by the grader and may result in all involved students receiving 0% for that assignment.

Homework Submission Format: To ensure that you are presenting your homework solutions in a way that the grader can easily understand and give credit where appropriate, please observe these guidelines:

1. You may type or handwrite neatly (using a pencil or tablet).
2. Use white copy paper or engineering paper (don't use paper with lines on the front as it can make the scan unreadable).

3. Scan and upload your homework ensuring that all problems are legible. If your submitted problems are not clear enough to read, you may not receive credit, so ensure your scan is high quality with the following recommendations:
 - a. Sheet feed PDF scanners in the [Engineering computer labs](#) or library
 - b. Camera phone apps as below, ensuring your page is resting on a flat surface, shooting from straight above. Crop the edges back to those of the paper.
 - i. iPhone or iPad: Notes app by following these [instructions](#).
 - ii. Android: [Simple Scan app](#)
4. Use only one problem per page, identify the problem number you are working on, and place name, class, and assignment number on each page. Put problem solution pages in order.
5. Box your answer, including units.
6. Showing your work is worth points on the homework.
7. Do not turn in assignments with large portions crossed out or erased.
8. In some cases, showing results in a graph or figure is required. In these cases, label your axes, include units, and make sure solution information is clearly displayed.
9. If you use Excel for assignment calculations, you must document the equations you used in the calculations.

Homework Deadlines: Late homework will be penalized by 20% per 24 hours late, with a maximum late period of 2 days. Unless otherwise noted, homework will be due on Wednesdays at 5 PM.

GRADING POLICY

Grade	Range
A+	100% to 96.67%
A	<96.67% to 93.33%
A-	<93.33% to 90.0%
B+	<90.0% to 86.67%
B	<86.67% to 83.33%
B-	<83.33% to 80.0%
C+	<80.0% to 76.67%
C	<76.67% to 70.0%
D	<70.0% to 60.0%
F	<60.0% to 0.0%

ASSIGNMENT	GRADE PERCENTAGE
Homework	30%
Class Participation	10%
Quizzes	30%
Final Exam	30%

ASSIGNMENT	GRADE PERCENTAGE
Total:	100 %

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

TECHNICAL INFORMATION

Canvas is the place 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.

We will also be using Zoom and iClicker Cloud.

To prepare for class, download the latest version of Zoom (<https://zoom.us/client/latest/ZoomInstaller.exe> ([Links to an external site.](#))) on a computer that you can use for class. Then, create and use a Zoom account with your colostate.edu email address at <https://zoom.us/signup>.

To create an iClicker Cloud account, go to iClicker Sync on the left side of the CIVE322 Canvas page. Then set up your account synced to CIVE322.

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](#).

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.

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.