



蘇州大學
Soochow University

GEO 326 Watershed Hydrology

Winter 2024

Course Credits: 4

Contact Hours: 56 hours

Instructor: TBA

Email:TBA

COURSE OBJECTIVES

The course introduces the basic concepts and theories of watershed hydrology. Topics involved in this course will contain principles in hydrology, precipitation, evaporation and evapotranspiration, infiltration, percolation and flow in the unsaturated zone, groundwater flow, snow and snowmelt, runoff Generation. This course will also provide students with an in-dept insight into the issues associated with watershed hydrology. After this course, students will be able to explore and apply analytical data to understand the water balance.

Upon Completion of this Course, students will be able to:

1. Understand the physical process and temporal and spatial variability of these processes
2. Understand the function of watershed hydrology
3. Apply methods to measure inputs and outputs of water in physical hydrological investigations
4. Describe and explore analytical data to understand the water balance, and transfer of water within watersheds

PREREQUISITES

GEO 110 Introduction to Geology

GRADING

Grades will be determined by accumulating points, with 100 points being the maximum, as follows:



ITEM	POINTS
3 Labs	30 Points
Midterm	35 Points
Final Exam	35 Points
Total	100 Points

Late submissions will be graded at the end of the course. Grades will be assigned according to the following rule:

$A \geq 90 > B \geq 80 > C \geq 70 > D \geq 60 > F$.

We reserve the right to make adjustments to the overall grading policy.

COURSE MATERIALS

Required Texts:

S. Lawrence Dingman, *Physical Hydrology*, 3rd Edition, Waveland Press, Inc, 2014.

Recommended (Optional) Texts or Other Materials:

None

COURSE TOPICS

MODULE	TASKS
Module 1	Topics: Topic 1: Hydrology: Basic Concepts and Challenges Topic 2: Definitions and Scope of Hydrology Topic 3: The Regional Water Balance Topic 4: The Global Hydrologic Cycle Assessments: Lab#1: Water Balance
Module 2	Topics: Topic 5: Principles and Processes Topic 6: The Evaporation Process Topic 7: The Precipitation Process Topic 8: Snowmelt Runoff Generation Assessments: Lab#2: Snowmelt



Module 3	Topics: Topic 9: Evapotranspiration Topic 10: Principles of Subsurface Flow Topic 11: Water Storage Topic 12: Basic Principles of Saturated Subsurface Flow Assessments: Midterm
Module 4	Topics: Topic 13: General Unsaturated-Flow Equation Topic 14: Infiltration and Water Movement in Soils Topic 15: The Infiltration Process Topic 16: Measurement of Infiltration Assessments: Lab#3: Infiltration
Module 5	Topics: Topic 17: Ground Water in the Hydrologic Cycle Topic 18: Regional Ground-Water Flow Topic 19: Runoff Generation and Streamflow Topic 20: General Characteristics of Stream Response Assessments: Final Exam

ATTENDANCE

1) Class attendance is required. Missing classes without permission will lead to decrease in overall grade.

Missing less than two classes: no penalty.

Missing more than two classes: 7% will be taken off from the overall grade.

If the instructor reports a student's frequent missing of class to the Soochow University Academic Administration Office, the student might get a written warning and might be prohibited from attending final exam.

2) Participants in this course are expected to arrive in class promptly and adequately prepared. The primary objective of this course is to critically engage with the readings and the subject matter. Therefore, course participants are expected to have completed the reading prior to class and prepare thoughtful reflections/commentaries to share with fellow colleagues.

LEARNING REQUIREMENTS



- 1) Late assignments are not acceptable and are subjected to grade deductions.
- 2) Assignments submitted in the wrong format will be counted as not submitted.
- 3) Failure to submit or fulfill any required course component results in failure of the class.
- 4) Make-up for midterm and final exams only with valid excuses, as defined by the University.
- 5) In order to earn a Certificate of Completion, participants must thoughtfully complete all assignments by stated deadlines and earn an average quiz score of 50% or greater.

TECHNOLOGY POLICY

The use of electronic devices in class is distracting, both for the user and for the rest of the class. Only non-programmable calculators can be used in the tests and exam. Any attempts to use cell phones and other electronic communication devices will be seemed as cheating. Laptops are discouraged, unless you use them for activities DIRECTLY related to the course (eg., note taking, reading course documents).

ACADEMIC INTEGRITY POLICY

Soochow University highly values the academic integrity and aims to promote the academic fairness, honesty and responsibility. Any academic dishonesty behaviors and any attempts to cheats and plagiarism will be reported to the university administration office. A written warning and the relevant penalties will be imposed. The record might be shown on the official university transcript.

DISABILITY ACCOMMODATION

Soochow University is committed to maintaining a barrier-free environment so that students with disabilities can fully access programs, courses, services, and activities at Soochow University. Students with disabilities who require accommodations for access to and/or participation in this course are welcome.

Note:

Please contact the University Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material.