

North South University
Department of Civil and Environmental Engineering (CEE)
CEE 260: Hydrology
Summer 2018 Section 1

Course Outline

INSTRUCTOR: Dr. Md. Sirajul Islam (sirajul.islam@northsouth.edu)
Professor, CEE (Room No: SAC 734)
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CLASS HOURS: ST 11:20 AM – 12:50 PM Room no.: SAC 207

OFFICE HOURS: ST 9:30 AM – 11:00 AM or by appointment.

COURSE DESCRIPTION:

Hydrology means the study of water - its global distribution and circulation, physical properties and movement, and interaction with the environment and living beings. Water in the landscape is not only a necessary component for life, it is the fundamental driver of landscape denudation and landform development. In almost all civil engineering design, hydrological concept is somehow needed. This course is about learning both the concepts and physical principles of hydrological process as well as the techniques that can be used to solve hydrologic problems.

TEXT: V T Chow, D R Maidment and L W Mays - Applied Hydrology, Mac Graw Hill

K Subramanya – Engineering Hydrology, Tata Macgraw Hill

However, class notes will be enriched with materials from a number of other sources as well. Strictly following class notes will be the best option to prepare for the course. Relevant materials will be provided adequately, or can be collected personally from the instructor, if required.

COURSE INSTRUCTIONAL LEARNING OUTCOMES:

Related BSCEE Program Outcome (a to k)	Objectives
(a) An ability to apply knowledge of mathematics, science and engineering;	To understand the fundamental concepts of the occurrence and movement of water in nature and its relation to engineering structures.
(e) an ability to identify, formulate, and solve engineering problems;	To apply different methods of hydrological principals to analyze river flow, land use change, flood or pollution movement, etc.
(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	To be able to apply hydrological principles in design and analysis of real world civil engineering structures by using models, etc.

COURSE CONTENT:

1. Introduction
2. The hydrological cycle
3. Catchment and water balance concept
4. Atmospheric moisture : Precipitation formation, occurrences and measurement
5. Losses from precipitation : Interception and evaporation, evaporation and Infiltration
6. Surface runoff and movement: mechanism, factors and stream flow measurement

7. Hydrograph : Concept and unit hydrograph
8. Groundwater
9. Statistical uses in Hydrology
10. Recent issues in hydrology: Hydrological modeling, Water pollution, human intervention to hydrological cycles: ways and consequences, climate change and its impact on different components of hydrological cycle
11. A brief description on the hydrological system of Bangladesh
12. Application of the hydrological concept to civil engineering design

FIELD TRIP, LAB MODELING EXERCISE: One Field Trip may be arranged to FFWC, CEGIS or IWM. Few lab classes will be there as well as modeling exercise to let students familiar with different hydrological models and computation methods.

AVAILABILITY OF LECTURE NOTES:

All the lecture notes are available at the university common folder "Resource". You can print them from Resource/CEE/Sirajul/CEE260. However, for some lectures, extra sheets might require to be collected from the photocopy shop. Other than lecture notes, relevant materials like class schedule, course outline, reading materials, videos, etc are available at different sub-folders of the same as well. Students are advised to check the folders at regular intervals.

EVALUATION:	Class attendance	7%
	Assignment.	5%
	Field trip/modeling/lab	8%
	Class tests	20% (3 out of 4)
	Midterm Exam	28% (1 Midterm)
	Final Exam	32%

EXAM POLICY: The format of the tests will be based on a combination of multiple choice or short questions as well as descriptive questions. Questions will be mostly conceptual type so that the students need not to memorize a lot, but understand the facts clearly. **NO MAKE UP CLASS TESTS OR MID TERM EXAM WILL BE ARRANGED UNLESS A VALID REASON FOR ABSENCE IS FOUND.** For an unavoidable circumstance, written explanation of the situation must be submitted before the exam. Presence of parents in person might require for some cases as well. If any class test or mid term exam cannot be held on the due date, the exam will be rescheduled for the next available class.

EXAM NOTICE: Exam notices will be provided in the class. No excuse will be granted simply because someone was absent in previous class and did not know the exam notice.

GRADING POLICY: NSU grading policy will be considered as reference, but not necessarily followed always. Minor deviation is possible depending on the class performance.

CODE OF CONDUCT: Last but not least, it is highly requested to maintain discipline in the class like not to be late, refrain from making noise during lecture time or not to leave the class early. Especially, adopting unfair means in the exams will be considered as a serious crime and the student shall be placed to the university disciplinary committee. Evidence of copying assignments shall be considered as tantamount to cheating as well. If someone is too late in the class he may not get attendance.

P.S: The instructor reserves the right to change any content or reschedule any timing as mentioned in this course outline, if deemed necessary.