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CE 322-102: Hydraulic Engineering

Behnam Kiani

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COURSE OUTLINES, POLICIES AND INSTRUCTIONS

Spring 2021

CE 322 - Hydraulic Engineering

Monday 06:00 PM,

Instructor: Behnam Kiani, Ph.D., Email: behnam.kiani@njit.edu

Text:

Bedient, P.B., Huber, W.C. and Vieux, B.E. Hydrology and Floodplain Analysis, 5th Ed. 2013. Publisher: Prentice Hall; 5th edition (February 25, 2012) ISBN:13:978-0132567961

Additional Textbooks:

Fundamental of hydraulic engineering systems, 5th edition” By Houghtalen, Akan
Hydrologic Analysis and Design, 3rd Ed. by Richard McCuen
Hydraulique Generale et Appliquee, Editor is Eyrolle, by Carlier, M. 1972

Prerequisite: CE 320, CE 321.

Objective: is to provide the tools required to design water distribution systems, such as storm drains. Examines related hydrologic and hydraulic techniques.

Course Description

Quantifying water flow in watersheds is a crucial step in the design of environmental facilities, such as delineating floodplains. This course deals with the water cycle over watersheds by addressing the motion of water masses in the atmosphere and in surface and subsurface systems, drainage system analysis and capacity calculations. Students who successfully pass this class should be able to deal with hydrology problems treated in the industry sector.

Required courses: Calc II and Hydraulics/Fluid Mechanics.

Week	Date	DAY	Chapter	Topic	Notes
1	01/25	Monday	1	Introduction,	
2	02/01	Monday	2	Hydrologic Analysis	
3	02/08	Monday	4	Flood Routing	
4	02/15	Monday	4, 5	Flood Routing, Hydraulic Simulation Model	
5	02/22	Monday	6	Urban Hydrology	
6	02/29	Monday	7	Floodplain Hydraulics	
7	03/07	Monday		* Midterm Exam	
	03/14				Spring Break
8	03/21	Monday	8	Ground Water Hydrology – Presentation Assignment	
9	03/28	Monday	9	Design Application in Hydrology - Presentation Q&A	3/28 withdrawal deadline
10	04/04	Monday		Hydraulic Structures	
11	04/11	Monday	13	Case Studies	
12	04/18	Monday		Case Studies	
13	04/25	Monday		Early Presentations & Discussions of Hydraulic Systems	
14	05/02	Monday		Presentation & Discussion	Friday Schedule
15				*Final Exam	Date TBD

Basis of Grading:

Homework	10 %
Class Participation	10 %
Class Activity	5%
Midterm	25 %
Presentation	20%
Final Exam	30 %

Grade Distribution:

86-100 = A

80-85 = B+

75-79 = B

70-74 = C+

65-69 = C
60-64 = D
59 or less F

Final “letter grade” will correspond exactly to student’s earned “numerical grade”.

There will be no additional assignment or make up to improve student’s grade.

Homework Instructions:

Homework must be turned in at the beginning of the class.

Late Homework will receive ZERO.

***Exam Instructions:**

Open books & reference materials. No electronic devices. Only non programmable calculators are allowed.

Exact times and dates for exams will be announced in class.

Policies:

If student misses an exam or fail to submit homework assignment on time or class attendance, student’s grade for that exam or attendance / homework will be **ZERO**, it will not be changed or substituted by different exam or assignment.

The only exception to the above is if **Office of the Dean of Students** sends an email telling the instructor to excuse the student’s absence or late submittal.

If the **Office of the Dean of Students** does not do the above or the office refers the student back to instructor’s discretion, student’s grade will remain zero.

The above apply to class participation grades.

Attendance will be taken at the beginning of the class; it is the student’s responsibility to alert the instructor if he/she arrives late to class so the attendance record can be adjusted.

Minimum attendance to pass the course is 80 percent or 12 classes out of total 15 classes.

Accessibility

Any student who has a need for accommodation based on the impact of a disability should contact the Instructor privately to discuss the specific situation as soon as possible. Contact Disability Resources and Services to coordinate reasonable accommodations for students with documented disabilities. The NJIT web site below provides additional information: <http://www.njit.edu/counseling/services/disabilities.php>

Academic Honesty

Students are expected to abide by the NJIT's Academic Honesty Policy. Any work submitted by a student for academic credit will be the student's own work. You are encouraged to study together and to discuss information and concepts covered in lecture and the sections with other students. You can give "consulting" help to or receive "consulting" help from such students. However, this permissible cooperation should never involve one student having possession of a copy of all or part of work done by someone else. During examinations, you must do your own work. Talking or discussion is not permitted during the examinations, nor may you compare papers, copy from others, or collaborate in any way. Any collaborative behavior during the examinations will result in failure of the exam, and may lead to failure of the course and University disciplinary action.