COURSE TITLE:	CE 321 – WATER RESOURCES ENGINEERING
SECTION:	101
CRN:	90823
PREREQUISITES	CE 200 AND CEE 200A AND MATH 279 OR MATH 305
INSTRUCTOR:	Nicole Del Monaco, PE, CFM, ENV SP
COURSE ASSIGNMENT:	Face to Face (Kupfrian Hall 211)
COURSE SCHEDULE:	TUES 6:00PM – 8:50PM (09/03/2024 – 12/21/2024)
BOOK:	Water Resources Engineering by David Chin, 4th edition, Pearson Publishing. Access Card, 4/e 9780135357705; available from NJIT bookstore or online at the MyPearsonStore. Recommended not required.
OFFICE HOURS:	TUES 5:00PM -6:00PM (Location TBD, please let me know in advance if you plan on coming to office hours)
CONTACT INFO:	nmd42@njit.edu

COURSE OVERVIEW: The objective of this course is to train the student in methods of hydrology; hydraulics; pumps; water distribution systems; flood control structures; stormwater detention and routing; design of hydraulic and stormwater systems; and groundwater. These engineering principles will be related to common design criteria and conditions in the consulting engineering field, as well as key discipline categories on both the Fundamentals of Engineering (FE) Exam and Principles of Engineering (PE) Exam.

SCHEDULE OF CLASSES:

Note: the page numbers provide a general range for the material we will go over in class. Not all material within the listed range will be covered in class (and not expected to know for exams) and there may be topics covered in class that are not in the book.

WEEK	DATE	TOPICS
1	9/3	Welcome! Syllabus
2	9/10	Chapter 2 – Fundamentals of Flow in Closed Conduits (p. 11-44, 58-61, 69-79)
3	9/17	Chapter 4 – Fundamentals of Flow in Open Channels (p. 160-185, 188-198, 205-215)
4	9/24	Chapter 8 – Probability & Statistics in Water Resources Engineering (p. 496 – 510)
5	10/1	Chapter 9 – Fundamentals of Surface – Water Hydrology 1: Rainfall & Abstractions (p. 566-573, 591-599, 612-616, 629-644)
6	10/8	Chapter 10 – Fundamentals of Surface-Water Hydrology II: Runoff (p. 669-681, 688-715)

WEEK	DATE	TOPICS
7	10/15	Midterm
8	10/22	Chapter 7 – Design of Hydraulic Structures (p. 365-397, 405-448)
9	10/29	Chapter 11 – Design of Stormwater Collection Systems (p. 764-815)
10	11/5	Chapter 12 – Design of Stormwater Management Systems (p. 824-903)
11	11/12	Chapter 14 – Fundamentals of Groundwater Hydrology I: Governing Equations (p. 959-971)
12	11/19	Chapter 15 - Fundamentals of Groundwater Hydrology II: Applications (p. 1017-1024)
13	12/3	Project Time
14	12/10	Project Time
15	12/17	Final Exam

GRADING REQUIREMENTS:

GRADING: Midterm 100 points; Final Exam 100 points; Project 100 points

Note: All exams and project grades are final, there will not be the use of a curve. If you find yourself struggling to understand material, please reach out to schedule time during office hours to review.

EXAMS: There will be a midterm and final exam. Each exam covers 1/3 of your grade.

PROJECT: Project outline and objectives will be discussed in detail in class. A separate handout will be provided with instruction.

ATTENDANCE: While not graded or required, I highly encourage you all to attend class. The material taught is not directly from the textbook, and therefore being in-person is the best way for you to understand the material being presented. In addition, participation is highly encouraged and will help me to see who is really trying to understand the material!

HOMEWORK: Homework will be assigned weekly to help with the understanding of the material. It will not be collected. I encourage intellectual collaboration on the homework. The objective of homework assignments is learning, and working together is an excellent way of doing that. But note that the exams will not be collaborative, so make sure you understand the material! I will email out the homework problems weekly by the day after class.

FINAL GRADES:
A= 90 to 100%; B+= 85 to 89%; B= 80 to 84%; C+= 70 to 79%; C= 60 to 69%; D= 50 to 59%; F= below 50%

Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of

F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu.

The NJIT Honor Code will be upheld, and any violations will be brought to the immediate attention of the Dean of Students.

This course expects students to work without artificial intelligence (AI) assistance in order to better develop their skills in this content area. As such, AI usage is not permitted throughout this course under any circumstance.

CEE Mission, Program Educational Objectives and Student Outcomes

The mission of the Department of Civil and Environmental Engineering is:

- to educate a diverse student body to be employed in the engineering profession.
- to encourage research and scholarship among our faculty and students
- to promote service to the engineering profession and society

Our program educational objectives are reflected in the achievements of our recent alumni:

1 – Engineering Practice: Alumni will successfully engage in the practice of civil engineering within industry, government, and private practice, working toward sustainable solutions in a wide array of technical specialties including construction, environmental, geotechnical, structural, transportation, and water resources.

2 – Professional Growth: Alumni will advance their skills through professional growth and development activities such as graduate study in engineering, research and development, professional registration and continuing education; some graduates will transition into other professional fields such as business and law through further education.

3 – Service: Alumni will perform service to society and the engineering profession through membership and participation in professional societies, government, educational institutions, civic organizations, charitable giving, and other humanitarian endeavors.

Our Student Outcomes are what students are expected to know and be able to do by the time of their graduation:

1. an ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental and economic factors.
3. an ability to communicate effectively with a range of audiences.
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data and use engineering judgment to draw conclusions.
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.