Spring 2024

CE 461 - 102: CE-461102 PP TO PREP. FOR THE FE -NCEES BOARD LICENSING EXAM

Medhat Attara

CEE 461– 102: Professional Practice In CEE

(3 credits)

Lectures Friday 6:00pm – 8:50pm
CKB 207

Instructor Dr. George Attara, PhD, PMP, PE Office Hours: By appointment
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Required Textbook

No Required Text

Course Description *(from NJIT's course catalog)*

Develop an understanding of the process to become a licensed professional engineer and familiarize the students with the professional practice of engineering including codes of ethics and professional business practices and to provide an adequate background for the Fundamentals of Engineering.

Course Objectives (General)

By the end of this course, the student will be able to:

This course Provides students with the type of design experience they would receive if engaged in civil and environmental engineering design practice including incorporating engineering standards and multiple constraints. Students can select from these design areas: structures, geotechnical engineering, transportation and planning, and sanitary and environmental engineering.

Course Topic 1 : An ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics

Course Topic 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.

Course Topic 3 : An ability to communicate effectively with a range of audiences

Course Topic 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

Course Topic 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.

Course Topic 6 An ability to develop and conduct appropriate experimentation, analyze and interpret data and use engineering judgment to draw conclusions

Course Topic 7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

POLICIES & PROCEDURES

Academic Integrity: It is expected that NJIT's University Code on Academic Integrity will be followed in all matters related to this course. Refer to NJIT's Dean of Students website to become familiar with the Code on Academic Integrity and how to avoid Code violations.

https://www.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf

Homework:• • All homework will be collected and graded.

• Late homework will be accepted with 50% reduction of the homework points.

• Homework sets must be uploaded on Canvas by the due date.

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• Use any 8½ x 11 paper that will show clearly the problems when scanned. • On the top of each page, in the space provided, print your name, course and section, and problem number.

• All problems must show the figure and data provided with the problem • All problems must have a free body diagram.

Exams:

• There will be Midterm and Final exams during the semester. .

• Exams must have Free-Body-Diagrams. ALL work must be shown for full credit.

• There will be NO make-up exams unless there is documentation provided to the Dean of Students Office to validate your absence.

• We do NOT curve the grades.

• All exams including final exam are closed book. All necessary formulas will be provided with the exam.

• The solution must illustrate the understanding of the material. Correct numerical solutions alone are insufficient for any credit.

• All answers must be accompanied by the appropriate and correct units. • The dates of the exams are shown on the schedule above. Dates may be changed at the Professor's discretion.

Calculation of Course Grade: A weighted average grade will be calculated as follows:

Basis of Grading

Mid-Term Exams	45%
Homework	10%
Final Exam	35%
Attendance/Participation/Quizzes	10%

Grade Distribution

A = 90 – 100	D = 60 – 66
B+ = 85 – 89	F = 59 or less
B = 80 – 84	W = voluntary before deadline
C+ = 75 – 79	INC = special circumstances.
C = 67 – 74	

See note below.*
*An Incomplete grade may be given in rare instances when the student is unable to attend or otherwise do the course due to illness, etc. All of the missed work must be made up during the following semester.
Policies

Attendance: Attendance will be taken at the beginning of the class.

Additional Note*:
In the case where any student misses an exam, or fails to submit an assignment on time, the Office of the Dean of Students is the only entity that would determine the legitimacy of the absence or the situation via a written email addressed to the course instructor.
It is the student's responsibility to contact the office mentioned above and make his/her case with proper documentation. Please note that your final grade will reflect your work and calculated exactly as indicated in the above breakdown, no extra credits will be given.

Instructor Commitment: You can expect the Instructor to be courteous, punctual, organized, and prepared for lecture and other class activities; to answer questions clearly; to be available during office hours or to notify you beforehand if office hours are moved; to provide a suitable guest lecturer or pre-recorded lecture when they are traveling or unavailable; and to grade uniformly and consistently.

Students with Documented Disabilities: NJIT is committed to providing students with documented disabilities equal access to programs and activities. If you have, or believe that you may have, a physical, medical, psychological, or learning disability that may require accommodations, please contact the Coordinator of Student Disability Services located in the Center for Counseling and Psychological Services, in Campbell Hall, Room 205, (973) 596-3414. Further information on disability services related to the self-identification, documentation and accommodation processes can be found on the webpage at: (http://www.njit.edu/counseling/services/disabilities.php)

Course Schedule:

Week	Date	Topics
1	Tuesday, January 16, 2024	**Structural Analysis and Design**
2	Tuesday, January 23, 2024	**Water Resources: Hydraulic and Hydrology**
3	Tuesday, January 30, 2024	**Construction, Surveying, Materials**
4	Tuesday, February 6, 2024	**Mechanics of Materials**
5	Tuesday, February 13, 2024	**Geotechnical Engineering**
6	Tuesday, February 20, 2024	**REVIEW (2 practice Exams with Solution) FOR MIDTERM EXAM**
7	Tuesday, February 27, 2024	**MIDTERM EXAM**
8	Tuesday, March 5, 2024	**Fluid Mechanics**
9	Tuesday, March 12, 2024	**Statics**
10	Tuesday, March 19, 2024	**Dynamics**
11	Tuesday, March 26, 2024	**Transportation**
12	Tuesday, April 2, 2024	**Ethics and Professional Practice**
13	Tuesday, April 9, 2024	**Engineering Economics**
	Tuesday, April 16, 2024	**Mathematics, Probability and Statistics**
14	Tuesday, April 23, 2024	**REVIEW (2 practice Exams with Solution) FOR FINAL EXAM**
15	Tuesday, April 30, 2024	**Comprehensive REVIEW FOR FINAL EXAM**
16	Tuesday, May 7, 2024	**FINAL EXAM**

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 safe, practical, resilient, 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 technical and interpersonal skills through professional growth and development activities such a 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