



CIVIL
ENGINEERING

ACADEMY

THE ULTIMATE CIVIL PE REVIEW COURSE

COURSE OUTLINE AND OBJECTIVES

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OBJECTIVES

Course Outline

- The course simply follows the NCEES specifications for the 8 'breadth' sections.
- Lecture 20% theory and 80% practice.
 - Project Planning
 - Means and Methods
 - Soil Mechanics
 - Structural Mechanics
 - Hydraulics and Hydrology
 - Geometrics
 - Materials
 - Site Development

	Number of Questions
1. Project Planning	4-6
A. Quantity take-off methods	
B. Cost estimating	
C. Project schedules	
D. Activity identification and sequencing	
2. Means and Methods	3-5
A. Construction loads	
B. Construction methods	
C. Temporary structures and facilities	
3. Soil Mechanics	5-8
A. Lateral earth pressure	
B. Soil consolidation	
C. Effective and total stresses	
D. Bearing capacity	
E. Foundation settlement	
F. Slope stability	
4. Structural Mechanics	5-8
A. Dead and live loads	
B. Trusses	
C. Bending (e.g., moments and stresses)	
D. Shear (e.g., forces and stresses)	
E. Axial (e.g., forces and stresses)	
F. Combined stresses	
G. Deflection	
H. Beams	
I. Columns	
J. Slabs	
K. Footings	
L. Retaining walls	
5. Hydraulics and Hydrology	6-9
A. Open-channel flow	
B. Stormwater collection and drainage (e.g., culvert, stormwater inlets, gutter flow, street flow, storm sewer pipes)	
C. Storm characteristics (e.g., storm frequency, rainfall measurement and distribution)	
D. Runoff analysis (e.g., Rational and SCS/NRCS methods, hydrographic application, runoff time of concentration)	
E. Detention/retention ponds	
F. Pressure conduit (e.g., single pipe, force mains, Hazen-Williams, Darcy-Weisbach, major and minor losses)	
G. Energy and/or continuity equation (e.g., Bernoulli)	
6. Geometrics	3-5
A. Basic circular curve elements (e.g., middle ordinate, length, chord, radius)	
B. Basic vertical curve elements	
C. Traffic volume (e.g., vehicle mix, flow, and speed)	
7. Materials	5-8
A. Soil classification and boring log interpretation	
B. Soil properties (e.g., strength, permeability, compressibility, phase relationships)	
C. Concrete (e.g., nonreinforced, reinforced)	
D. Structural steel	
E. Material test methods and specification conformance	
F. Compaction	
8. Site Development	4-6
A. Excavation and embankment (e.g., cut and fill)	
B. Construction site layout and control	
C. Temporary and permanent soil erosion and sediment control (e.g., construction erosion control and permits, sediment transport, channel/outlet protection)	
D. Impact of construction on adjacent facilities	
E. Safety (e.g., construction, roadside, work zone)	

OBJECTIVES

CBT

- Crush the 'AM' type problems on the exam!



OBJECTIVES

Goals

- Become more familiar with the type of problems asked and know how to solve them.
- I want you to crush the breadth portion (and depth)!!
- Understand that there will be about 12-15 questions in the “AM” and the same amount in the “PM” that are straight up theory/conceptual type questions. Don’t be taken by off guard by that.



OBJECTIVES

Goals

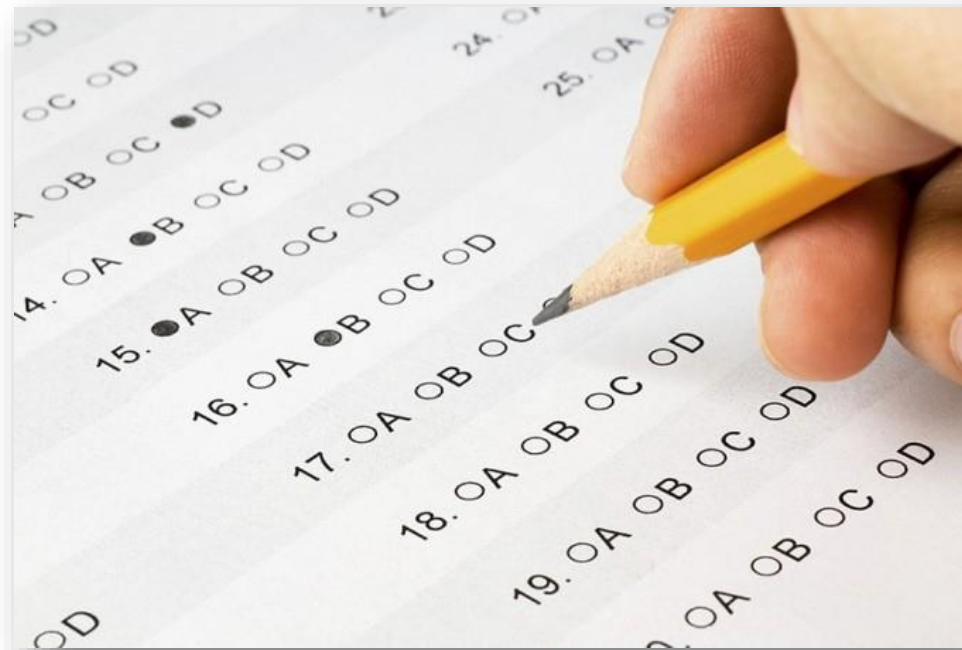
- Know what resources you should be getting to help you practice and study from.



OBJECTIVES

Goals

- Test yourself with practice exams (we have them for you) and setup a testing environment similar to the real exam. Do a 40-question breadth exam and a 40-question depth exam maybe on two different Saturdays.
- Help you know what NOT to do.



OBJECTIVES

Not Goals

- Attempt to be an all-out comprehensive presentation about every little thing that is found within a particular subject. You may need to hit a college course for that.
- Discuss problems that have little to no chance whatsoever of being on the test.
- Discuss real-life problems.
- Focus on the small stuff or topics not related to the exam. Period.

COMING UP NEXT

Coming up next!

1. Effective test taking tips and strategies. Let's get this exam aced!





CEA