

Big Changes in SE Exam are a Big Concern

By CASE Executive Committee

The National Council of Examiners for Engineering and Surveying (NCEES) intends to transition the SE Exam to a computer-based test (CBT). NCEES began the process of transitioning its licensing exams to a CBT format in 2011, and the SE exam is the last to undergo the change. Starting in 2024, the current two-section, 16-hour Structural Exam will be replaced with the new computer-based test. But here's the rub: the new exam will be expanded to four sections and a length of 21 hours.

Although NCEES received significant input from the structural engineering community regarding the exam's content, the format of the exam came as a surprise. CASE, through its participation, along with NCSEA and SEI, in the Structural Engineering Licensure Coalition (SELC), only became aware of the proposed format change following an April 2022 NCEES presentation to the SELC.

In a coordinated effort, representatives of CASE, SEI, NCSEA, and SELC attended the Structural Caucus at the NCEES Annual Summit in August. Mr. Jason Gamble, P.E., NCEES' Chief Officer of Examinations, presented to the Caucus and answered questions. At press time, NCEES is still working out many of the key details of this new exam.

Here is what we have learned about NCEES' new CBT Structural Exam:

- As with the current exam format, there are vertical and lateral components. Each component has a *breadth* and *depth* section. 4 sections comprise the new examination, all of which must be passed. The current exam has two components with one section in each.
- The two breadth sections will consist of multiple-choice questions. For the exam *reliability* to be at the level NCEES desires, it will be longer by 5 questions – thus the increase in the number of questions and exam length – from 40 to 45 questions and from 8 hours to 11.
- The two *depth* sections will have five scenarios, each with 12 questions. On 4 of the 5 scenarios, 2 of the questions are *pretest* questions. The 5th scenario contains only *pretest* questions. Pretest questions do not count toward an applicant's grade and will be used to create a bank of questions for future exams. The new *depth* exams total 10 hours of total depth versus 8 hours for the current depth exam.
- The *breadth* sections will be offered year-round. The depth sections will currently only be offered twice per year.
- With the current exam, a person can only pass vertical (breadth and depth) or lateral (breadth and depth) independently. With the new exam, a person can pass any of the 4 sections independently.
- All NCEES exams have seen a drop in the number of people taking exams where the transition was made to CBT. The expectation is that the new structural exam will see a similar decline in applicants.

So that's the breakdown of the new exam. Here are our concerns:

- The greatly expanded length. The new CBT exam expands from 16 to 21 hours, and the number of testing days doubles from two to four. This affects test-takers and their employers in terms of lost time and productivity. NCEES has informed CASE that much of the new testing requirements – the extra questions, longer seat time, staggering of exam parts – are



driven by a *reliability* rating. Through SELC, CASE will continue to offer input to NCEES on the exam length issue, but to date, NCEES has not been very receptive to our feedback.

- Increased cost. SELC has been informed that the total exam cost will be \$1400, versus \$1000 for the current exam. However, a test taker will need at least two and possibly four separate trips to take the test. Travel, lodging, and meal expenses will at least double what they are currently. Companies will have to determine if they can afford to fund their employees' SE licensing efforts.
- Will a longer exam process deter younger engineers from pursuing SE licensure? The current structural exam is difficult, with pass rates below 40%, much lower than any of the other PE exams. Candidates will have to decide if the time required to prepare for and take the exam is worth the effort. Some may forgo licensure. Others may choose another NCEES exam to gain licensure, despite their daily practice of structural engineering. Most states only require PE licensure for designing structures.
- Will a longer exam process blunt the decades-long state-by-state effort by our profession to promote separate licensure for structural engineering? One state licensing board representative has speculated that states may be less willing to pursue separate SE licensure based on a 4-day structural exam.
- Will this newly expanded exam act as a further barrier to entry into the structural engineering profession? Given the rigors of a 4-day exam (plus an 8-hour FE exam), students may choose a different engineering field – or a different major altogether.

CASE strives to be the voice for the business and professional practice interests and concerns of structural engineering firms. The NCEES structural exam is a fundamental component for ensuring practitioners in our field are qualified to design the structures relied upon to sustain modern society. The importance of licensure for our profession is why we have taken to the editorial page to express our concerns. We welcome your input on this critical issue. ■



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