

Structural Exam Study Aids

The Key to Your Success

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Passing the New Structural Exam—You Too Can Do It after Turning 40 by Thomas A. Grogan, Jr., P.E., S.E., which appeared in the September 2011 issue of *STRUCTURE*®, detailed an excellent strategy for preparing to pass the new SE exam. This article provides further information on the SE exam and some of the tools available to help you study. These tools can also be used to prepare for the PE Civil: Structural exam.

The SE Exam

Beginning in April 2011, the SE exam was reorganized into a 16-hour exam spread over a Friday and Saturday. The Friday component focuses on Vertical Forces, and Saturday focuses on Lateral Forces. Both days are broken into 4-hour sections, with the morning covering breadth problems in a multiple choice format and the afternoon containing a choice of essay (work out) problems. Examinees must choose

between either Buildings or Bridges for both of the afternoon modules, and the two cannot be combined. In this way a single area of practice

(buildings or bridges) is evaluated in depth.

Each of the morning breadth modules contain a total of 40 multiple choice questions that must be completed in a 4 hour time period. This provides an average of 6 minutes to complete each problem. It is important to answer all of these

questions, even if you have to guess, as unanswered questions count as wrong answers. The morning breadth problems may include both building and bridge problems.

Each of the afternoon depth modules requires examinees to complete 3 or 4 problems in either the area of buildings or bridges. The amount of time available for each problem depends on the module chosen. The breakdown of the depth problems is shown in the *Table*.

The PE Exam

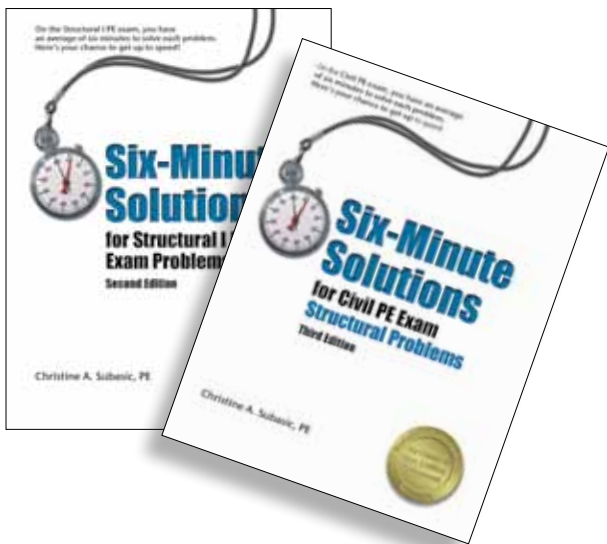
The PE Civil: Structural exam follows a similar format but is only an 8-hour exam. It is composed of a 4-hour morning breadth module and a 4-hour afternoon depth module. However, for the PE Civil: Structural exam, both modules are multiple-choice format, with an average of 6 minutes to complete each problem. In addition, the Structural depth module can include both building and bridge problems.

Choose Your Study Aids

So what is the best way to prepare? There are many types of study aids available to choose from. A brief (unscientific) survey of some recent examinees indicated that sample multiple-choice problems and solutions was the most helpful type of study aid, followed by other solved problems. Several publishers produce study aids with multiple-choice problems, including NCEES,

SE Exam Afternoon Depth Problems.

	Vertical Depth Component	Lateral Depth Component
Buildings Module	<p>Four 1-hour problems in each of the following areas:</p> <ul style="list-style-type: none"> • Steel structure • Concrete structure • Wood structure • Masonry structure <p>At least one problem includes a multistory building, and at least one problem includes a foundation.</p>	<p>Four 1-hour problems in each of the following areas:</p> <ul style="list-style-type: none"> • Steel structure • Concrete structure • Wood and/or masonry structure • General analysis (e.g., existing structures, secondary structures, nonbuilding structures, and/or computer verification) <p>At least two problems include seismic content at Seismic Design Category D and above, and at least one problem includes wind content of at least 110 mph. Problems may include a multistory building and may include a foundation.</p>
Bridges Module	<p>Two 1-hour problems and one 2-hour problem in the following areas:</p> <ul style="list-style-type: none"> • Concrete superstructure (1 hour) • Other elements of bridges (e.g., culverts, abutments, retaining walls) (1 hour) • Steel superstructure (2 hours) 	<p>Two 1-hour problems and one 2-hour problem, in the following areas:</p> <ul style="list-style-type: none"> • Columns (1 hour) • Footings (1 hour) • General analysis (i.e., seismic and/or wind) (2 hours)



Professional Publications Inc., and others. The study aids identified as most helpful by those surveyed are described below, but are in no way the only options available.

One popular option is the Six-Minute Solutions series published by Professional Publications Inc. This series gets its name from the average of 6 minutes that you have for each of the multiple-choice questions on the exam. These books contain 80 to 100 multiple choice questions like those encountered on the exam and detailed,

step-by-step solutions. The problems cover most of the topics included in the NCEES exam specifications, and wrong answers are based on mistakes that are easy to make.

Another option is the NCEES sample exam study materials, published for both the SE exam and the PE exams. These guides contain sample exam questions and solutions in the exact format they appear on the actual exams.

Kaplan also publishes a series of review books, sample problems, as well as online tools to aid in studying for the SE and PE exams.

Though not mentioned by the survey respondents, there are a number of other online resources available, which can easily be found with an online search for “PE exam study”. Options include webinars as well as self-paced online study aids. In many cases, you have a choice of a complete exam preparation package covering all topics likely to be found on the exam, or choosing only select topics that you feel you need the most review. For example, many state and national engineering associations offer webinars on specific topics covered in the PE/SE Exams. There are several websites that offer online study aids for specific subject areas.

Practice, Practice, Practice and Plan for the Test

The key to successful preparation is practice solving problems – lots of them. Or as one survey respondent said, “Work as many practice problems as you can.” Recent examinees also had the following advice to offer:

“Manage your time during the exam! You must bring a watch to manage time. Time seems to go by very quickly during the exam.”

“Tab out your books so you can quickly find the appropriate information. When you think you have worked enough sample questions, work more. Create a binder with useful reference material and organize it by subject (e.g. concrete, wood, steel).”

“Cover all the topics in proportion to the expected questions on the test; mark your references for quick access.”

With so many choices available, everyone should be able to find something that works for them. The secret to success is doing the work, regardless of which tools you choose. Allow yourself plenty of time to prepare. It’s real work, but the benefits are real as well. Good Luck!■

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