

PREPARING

FOR THE FUNDAMENTALS OF
ENGINEERING EXAM



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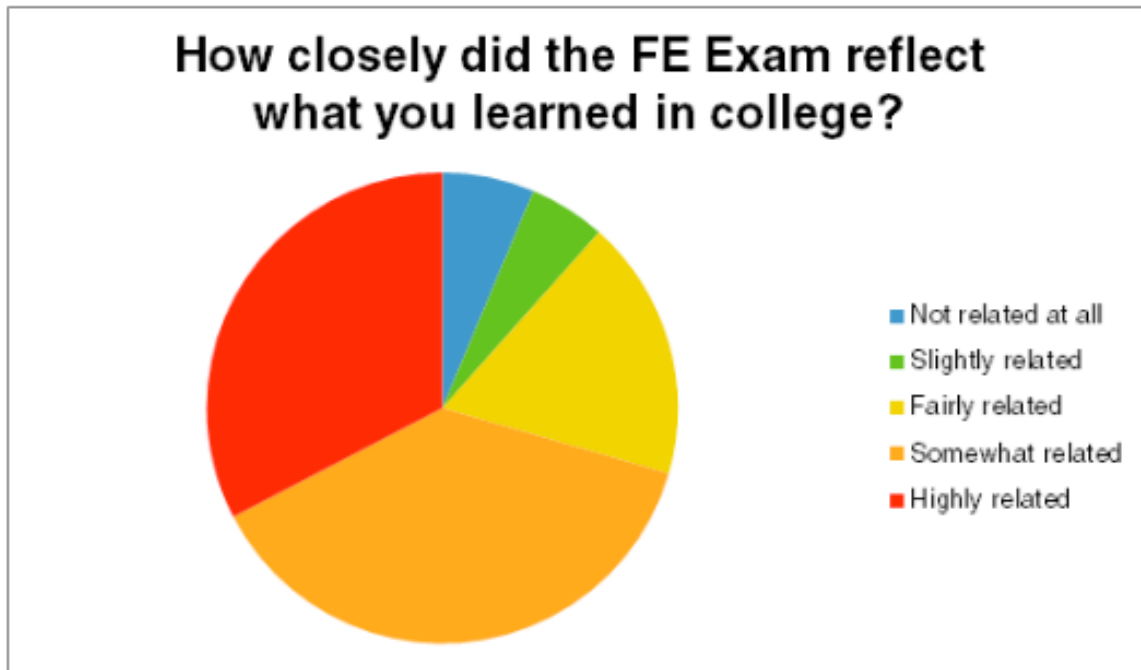
Taking the Fundamentals of Engineering (FE) exam is considered a must, because it is the first step to becoming a professional engineer. If you aspire to do engineering consulting work or be in charge of a company's engineering work, you must obtain a Professional Engineer (PE) license. In order to accomplish this goal, you must first pass the FE exam and then complete four years of progressive engineering experience. But before we do all that, let's start with the critical FE exam.

Preparing for the FE exam can seem overwhelming, and you may have a number of questions about the test. How should you prepare and what should you expect from this computer-based test? To pass each FE exam, you will need to achieve at least the minimum passing score set by the National Council of Examiners for Engineering and Surveying. In 2016, the [pass rate](#) of FE exams varied from 64% for first-time industrial engineering test-takers to 80% for first-time mechanical engineer test-takers.

In February 2017, we surveyed 824 FE test takers and asked them about their experiences. Their advice is incorporated into this eBook to help you prepare for the FE exam. This resource was created with you in mind. Good luck on your journey to become an engineer-in-training (EIT).

WHAT TO EXPECT

Figure 1



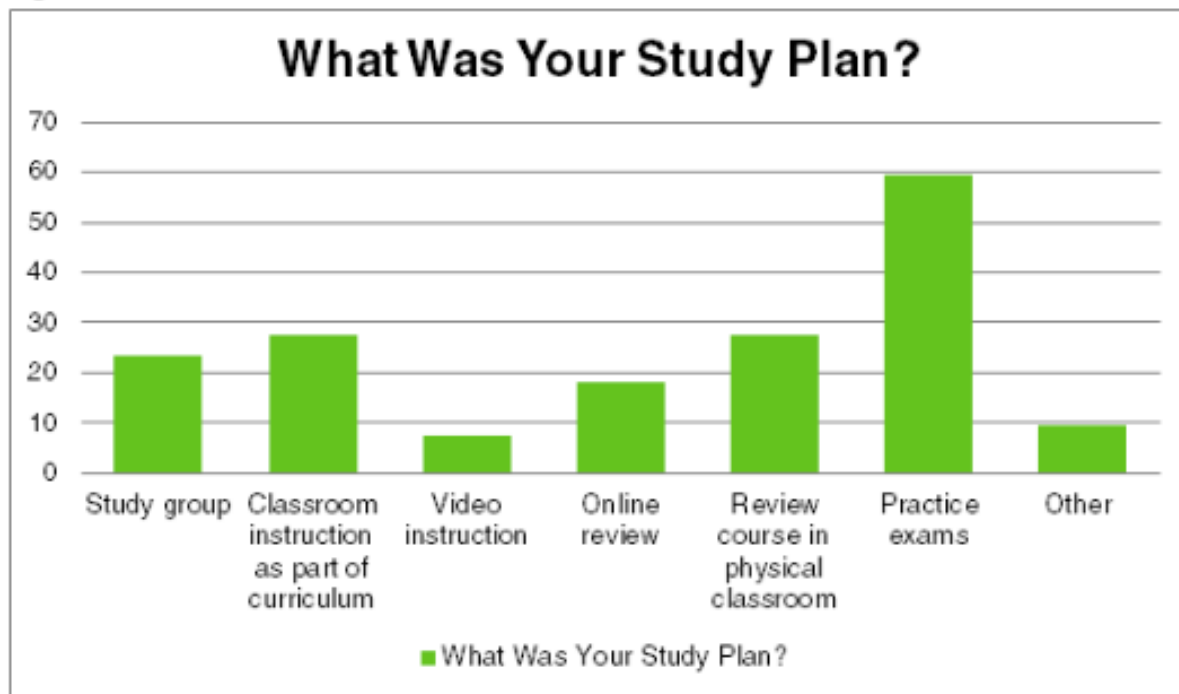
// *The number of problems in the first four hours surprised me.* //

It can be extremely intimidating to take any test without understanding its format and scope beforehand, and the FE exam is broad in scope. Questions can vary from real-world experience to college subjects, such as thermodynamics and fluid mechanics. Because of the tight integration to college coursework, many opt to take the test during college. A recent Brightwood survey found that roughly 33% of respondents sat for the exam as college juniors or seniors.

However, others decide to take it after gaining some practical knowledge in the engineering field. Roughly 26% took it within two years of graduating from college, and 22% took it three to five years after. Taking it within the first few years is most common because many of the test questions reflect the typical engineering school curriculum. In fact, survey respondents overwhelmingly said the FE exam was either “highly related” (32.6%) or “somewhat related” to what they learned in college (see Figure 1).

GETTING PREPARED

Figure 2



“The amount of information available in the reference book surprised me the most. With the exception of some theory questions, the reference book contained the needed equations and information to answer most of the questions if you were able to find and apply the information.”

Prep packages are available for many engineering disciplines, including civil, electrical, computer, environmental, industrial, and mechanical.

EITs report that studying is definitely a prerequisite—a majority of respondents to the Brightwood survey (50.3%) said they studied three months before taking the test, and 32.3% studied for six months. You have to work and put in the time to be successful, but there are many ways to review and get the necessary knowledge to pass the exam. (See Figure 2)

GETTING PREPARED CONT.



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Study guide

More than half of respondents (51.1%) purchased a printed study guide, but there is also a free, downloadable NCEES Handbook available to review.

Identify your strong and weak areas so you know which topics you'll need to spend the most time on.

Practice test

This exam is challenging, both due to the material covered and the time allotted. It's roughly 6 hours long, 110 questions, and up to 18 separate subjects to master, depending on your concentration. It can be overwhelming. Taking practice tests will familiarize you with the phrasing of the questions and the overall format of the exam. Understanding the testing framework will ease your anxiety and help you concentrate on the questions and answers based on

your knowledge. Many FE test takers commented on the volume of questions that are asked and noted that the number of problems (there are 110) can be daunting. In addition, some are surprised at how relevant their real-world experiences can be. Take practice tests regularly throughout the study "training" period. The more practice tests you take, the more confident you'll be on exam day.

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GETTING PREPARED CONT.



Create a timeline

First, identify your exam date. Second, determine which textbooks and materials you need to obtain, such as the FE Review Manual (third edition) or the EIT Reference Manual, as well as the deadline for receiving them. Third, determine whether you want to take a review course. Although there are a variety of study methods, review courses have proven to be popular and effective.

Slightly more than 18% of our survey respondents opted to take an online review course, while roughly 28% participated in a live review course via the traditional classroom. Remember, a combination of materials is often a good approach to keep your interest during what can be considered a “study marathon.”

Get organized

Figure out how much material needs to be covered by the day of the exam and divide the workload over the time available. FERM suggests a day to review each chapter. Write down reading days and times, as

well as study dates and times. A study partner can be instrumental in keeping you on task. Make a plan and stick to it.

GETTING PREPARED CONT.



Instructor-Led & Self-Paced Courses for the FE Exam

- ✓ Personalized Instruction
- ✓ Premier Materials
- ✓ Anytime, Anywhere Review

19 out of 20 Students Recommend PPI's Prep Courses!

Determine your study strategy

Set up your study time based on the exam percentages for each subject. You may want to study twice as much for a subject that makes up 15% to 20% of the exam rather than for a subject that makes up only 7%, for example. Also, focus first on subjects you know best. Becoming an expert on those topics will be quick, and it'll take no time to brush up on areas in which you are fluent. As a result, the subjects you know least should be focused on last.

At first, that may seem counterintuitive. But you will be able to answer the questions you are an expert in first, leaving sufficient time for the more challenging parts of the test. And the most difficult questions could take up too much valuable time, so leaving them for last is the most practical strategy. Furthermore, successful test takers advise reviewing math skills such as calculus, algebra, geometry, and trigonometry. The basics are valuable and provide a foundation for solving far more complicated problems.

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LEARN FROM EXPERIENCE



While it's true that no two people will have the exact same impression of a given test, it's helpful to prepare with the knowledge of what others thought of the examination. Many previous test takers told us that the breadth and scope of the questions were surprising. That, coupled with the long duration of the test, can be exhausting, so prepare accordingly.

In addition, many noted that the exam reflects nearly everything available within the practice literature. Therefore, selecting the most relevant practice and study materials, and then devoting three to six months to prepare, are the keys to success.

Passing the FE exam shows that you are serious about licensure and sets you apart from other candidates. Employers commonly select job candidates based on which one they believe will

bring the most benefit to their firm, and employees with a PE license are generally considered better candidates than those without the credential. In addition, aside from showing prospective employers you are a knowledgeable and serious candidate, it may also give you a bump in pay. The job site [Monster](#) reports that, on average, engineers who have a PE license earn 5% more than those who don't.

As a future engineer-in-training, you must make the most of your time before and during the exam. Studying smarter, not harder, means you must prioritize the subjects on the exam—first checking off the topics you're strongest in and then moving to ones that require more time to answer correctly. By being a "smart" test taker, you can pass the FE test with flying colors.

CONCLUSION



After reading this eBook, we hope you feel more informed as a Fundamentals of Engineering exam taker. For additional information, please check out our expansive library of free resources, designed to guide you through the decision-making process. Brightwood

Engineering Education, formerly Kaplan Engineering, is committed to supporting your educational and career goals, and our exam prep materials are designed to help you pass. Visit [our website](#) to browse or enroll in our FE exam study programs. Best of luck to you!