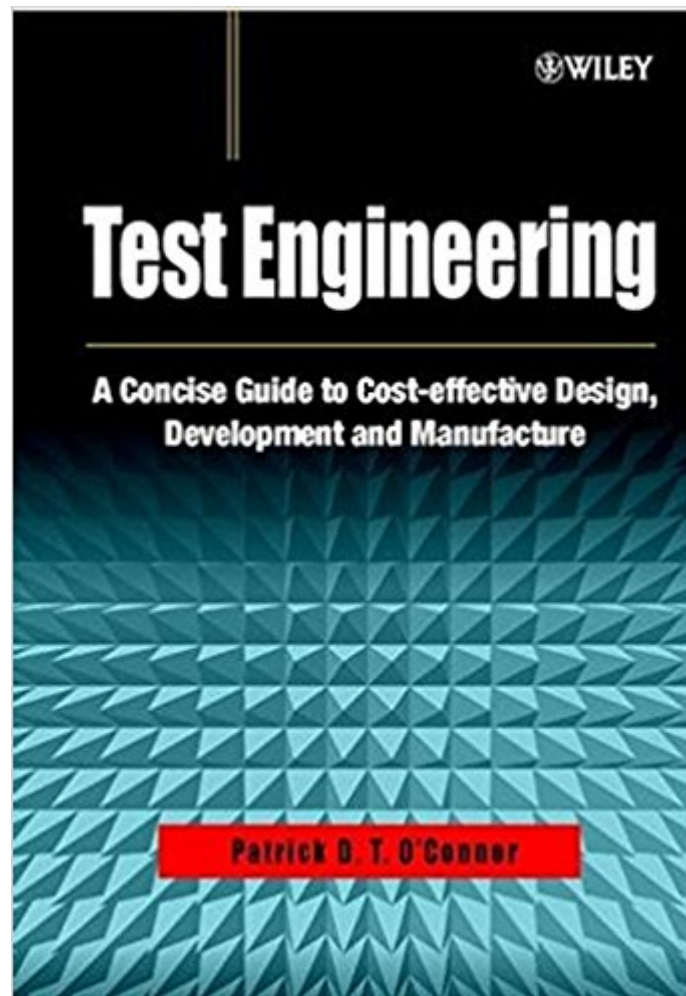




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Test Engineering: A Concise Guide To Cost-effective Design, Development And Manufacture



Synopsis

Testing is usually the most expensive, time-consuming and difficult activity during the development of engineering products and systems. Development testing must be performed to ensure that designs meet requirements for performance, safety, durability, reliability, statutory aspects, etc. Most manufactured items must be tested to ensure that they are correctly made. However, much of the testing that is performed in industry is based upon traditions, standards and procedures that do not provide the optimum balance of assurance versus cost and time. There is often pressure to reduce testing because of the high costs involved, without appreciation of the effects on performance, reliability, etc. Misperceptions are commonplace, particularly the idea that tests should not stress products in excess of their operating levels. The main reason for this situation seems to be that engineers have not developed a consistent philosophy and methodology for testing. Testing is seldom taught as part of engineering curricula, and there are no books on the subject. Specialist areas are taught, for example fatigue testing to mechanical engineers and digital device testing to electronics engineers. However, a wide range is untaught, particularly multidisciplinary and systems aspects. Testing is not just an engineering issue. Because of the importance and magnitude of the economic and business aspects testing is an issue for management. Testing is perceived as a high cost activity, when it should be considered as a value-adding process. The objective of this book is, therefore, to propose a philosophy of engineering test and to describe the necessary technologies and methods that will provide a foundation for all plans, methods and decisions related to testing of engineered products and systems. The book will help those who must manage and conduct this most difficult and uncertain task. It will also provide a text which can be used as the basis for teaching the principles of testing to all engineering students.

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Customer Reviews

"All undergraduates should read it and all test and engineering managers should have a copy."
(Journal of the Safety & Reliability Society, Autumn 2000) "Intended as an undergraduate engineering textbook, it covers mechanical, electronics, and software testing, and identifies which testing methods are appropriate to each stage of the product life cycle." (SciTech Book News, Vol. 25, No. 3, September 2001)

Testing is the most expensive, time-consuming and difficult activity in the development of engineering products and systems. Many industrial testing practices are based upon traditional standards and procedures that fail to provide the optimum balance of assurance versus cost and time. Presenting a consistent philosophy of test engineering, this book is the first of its kind to describe the broad spectrum of modern methods and technologies. This valuable reference will aid engineers who must manage and conduct the difficult and uncertain tasks of testing new designs and products. The unique and readable style makes this an indispensable text for all engineering students. * A multi-disciplinary approach to test engineering including test economics and management. * Practical, concise descriptions of the methods and technologies in modern mechanical, electronics and software testing, including accelerated test. * Insights into the developing interface between modern design analysis methods and testing practice. * An explanation of why products and systems fail, which testing methods are appropriate to each stage of the product life cycle and how testing can reduce failures. * An overview of international testing regulations and standards.

I received the Test Engineering textbook on-time. The textbook is new. I am very pleased and I will use this textbook in teaching future engineers.

Great, only get this book if you want to make significant improvements to the quality of your products...My only negative is how he treats Reliability/Testing and DOE as 2 separate topics rather than in combination. But other than this, outstanding.

A very good book in content, O'Connor covers the major issues, provides resources and methods for driving deeper into developing appropriate test plans and does an okay coverage of test management. The book could do better from a Test Philosophy perspective, although the chapter on management comes close. The drawback is the publishers quality of reprinting the figures. At last count there were 8 figures with missing or illegible text. Mostly this is annoying and not detrimental to conveying the concepts. However, the flow charts on test management / test plans are so bad as to be nearly worthless. It could be an issue with the particular printing I have. As of this review I have attempted to contact the author and publisher, but I do not expect a response. I replaced the book, but the replacement also had the problems. So would I recommend the book, yes, but only IF the figures are taken care of, otherwise I would say find a different source. If the figures are resolved then I would rate it a strong 4, maybe a 5. If the author grows the test management material then it would be a strong 5.

It is the very first book (that I'm aware of) written for test engineers and managers. This book is an overview of all types of testing. The author's philosophy is excellent....."The author has never found a company or a project where it was considered in retrospect by those involved that too much was spent on a development test programme." Test Engineering by Patrick D. T. O'Connor. When you consider that Chernobyl, Three Mile Island, the Comet IV and the Challenger failed not because of negligence, but because critical data slipped through the cracks, or was misinterpreted, this book may just prevent that next tragic unknown from taking place. Or at least arm engineers, and managers, as to what is taking place. Highly recommended, from one in the business.

I purchased this book three years ago, when I took on work responsibility for testing and verification. After giving it a first and second read, I can safely say that it did not leave my bookshelf until I cleaned out my cube as I left for a different company. The text is informative for those who have no background in the subject of true test engineering, but for those whose industries are governed by specific, required/mandatory methodologies, this book is not of much use. It is geared primarily to testing for the electronics industry, and even then only provides a "35,000 ft" view rather than the detail one would expect from an "engineering" book. Important (some would say essential) topics for reliability engineering (Arrhenius, Weibull, etc.) are mentioned but glossed over, leaving the reader to purchase additional \$100+ volumes dealing with these subjects. Again, if you're new to testing, it's a great introduction. If you have any exposure to the field, I would look elsewhere for more detailed reading.

Good book but is lacking in introduction to test processes - would be great for startup companies if had a little more detail on tests to run & how to start your test department. Still useful though!

I bought this book seeking practical information relating to testing of manufactured PCB assemblies. I found relatively little information on that subject, and the information I did find was of a general nature. I got the impression that if you are interested in a survey of issues dealing with mechanical failures, you might find more to like in this book.

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