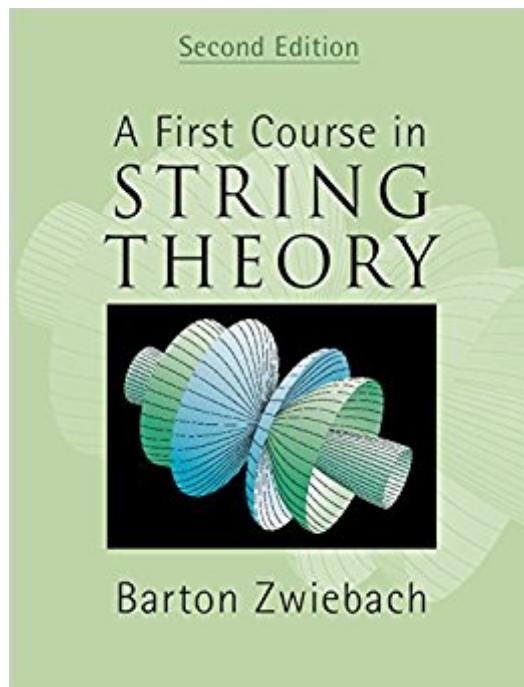


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# A First Course In String Theory, 2nd Edition



## Synopsis

Barton Zwiebach is once again faithful to his goal of making string theory accessible to undergraduates. Complete and thorough in its coverage, the author presents the main concepts of string theory in a concrete and physical way in order to develop intuition before formalism, often through simplified and illustrative examples. This new edition now includes AdS/CFT correspondence, which is the hottest area of string theory right now as well as introducing superstrings. The text is perfectly suited to introductory courses in string theory for students with a background in mathematics and physics. New sections cover strings on orbifolds, cosmic strings, moduli stabilization, and the string theory landscape.

## Book Information

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## Customer Reviews

"When it first appeared, Zwiebach's A First Course in String Theory provided a great launching point for those who wanted to learn about the field of string theory... .The second edition is filled with many updates, including the connection to particle physics emphasizing the strong interactions, and provides an even better starting point for beginning physicists interested in learning about this exciting field." - Professor Per Berglund, University of New Hampshire

Zwiebach is once again faithful to his goal of making string theory accessible to undergraduates. This text now includes AdS/CFT correspondence, as well introducing superstrings. With almost 300 problems and exercises it is perfectly suited for introductory courses for students with a background

in physics.

My interest in String theory arose 3 years ago reading Smolin's book "Three Roads to Quantum Gravity". I knew I couldn't understand the math of String Theory so instead I spent two years preparing by learning Quantum Field Theory and Differential Geometry - then Zwiebach's book came out. There were three issues that I wanted to understand 1) How did string theory actually produce a framework for the standard model, 2) What was the connection between string theory and black holes and 3) How was it that small distances could be indistinguishable from large distances. First Course delivered nicely. Part 1 - Basics took some effort not only because the material was new but also because it was not motivated, ie. I did not understand why I was studying the material, I did not understand where it was leading. A little trust and faith went a long way though because then I got to Part 2 - Developments where chapters 15, 16 and 17 addressed the topics I was interested in beautifully. In addition my interest in string theory now extends into other areas for example Maxwell fields on D-branes. I'll be going back over Part 1 - Basics soon since I feel I will get a lot more out those chapters having digested Part 2 - Developments. A great book and one I'm grateful for as how many readable introductions are there? - not many!

The book is very clear explaining everything. Totally recommended for people like me that want to get to know better this field

An advanced undergraduate course in String Theory for Physics majors. It is complete and thorough in its coverage. Also recommended for self-study.

It was a gift

As an engineer and faithful follower of theoretical physics, I was trying to understand Superstring Theory. After "The universe elegant" (Greene) and "The Cosmic Landscape: String Theory and the Illusion of Intelligent Design" (Susskind), and even "The Trouble With Physics: The Rise of String Theory, the Fall of a Science, and What Comes Next" (Smolin), I have been fortunate to encounter this book. Barton Zwiebach offered a pedagogic and intelligent exposition. Everything is explained with so good figures, Lagrangian and Action Principle as main rules for deductions, evolution scheme from just a point to D-branes, explanation of every assertion and formulae, updating with current state of the art, orientations for further readings, all of them are just some of the virtues of

this book. Its lectures allow me to get more lectures about the subject. Thanks to Mr Zwiebach for allowing me the opportunity to enjoy this book.

Simply put this is one of the best physics textbooks ever written. Its a model of clarity and explanation which makes the abstract field of string theory accessible to almost anyone willing to put their mind to it. Zwiebach begins with a nice review of special relativity and quantum mechanics with a notation geared toward strings and frequent enticements of extra dimensions. Each chapter is very readable and filled with "Quick calculations", simple problems you can work along the way to build your confidence and understanding as you read. I also like his emphasis on dimensional analysis, a basic aspect of physical thinking that often gets left out. The book is pretty much self-contained. If you haven't seen field theory before, don't despair, Zwiebach includes some nice chapters on the basic concepts. After introducing the basic concepts, the second half of the book covers all the interesting topics in the field like "D-branes", "T duality" and "String Thermodynamics and black holes". Throughout he sticks to the "light cone gauge", which is better for a first exposure to string theory. In conclusion this book is a masterpiece that should serve as a model as to how physics textbooks should be written.

Barton gives a group of lectures based on this book. Go to the Perimeter Institute and you can find his lectures. I have taken courses in OFT, General Relativity and String theory. This book is great for learning String Theory and is one of the best. I want to talk about something else this book does. The reason I said what courses I have taken, is this book has one other consequence. It refines the skills you already have. Had I read this book first before OFT I would have really been ahead of the game. The people I know who read this book first had a much easier time with OFT. He does the action integrals without the Euler-Lagrange equation. Any time a book refines your skills beyond the subject it is teaching, is a really good book. Others have pointed out how good it is at teaching string theory. I just wanted to point out other benefits of the book. Even if string theory turns out to be wrong, this book will make you a better Physicist. Remember to go online and watch some of his lectures. His lectures make reading the book boring, because you feel you have seen it all before and that is good.

As a physics graduate 45 years ago I found this to be a good introduction. Plenty of maths but not too pedantic.

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