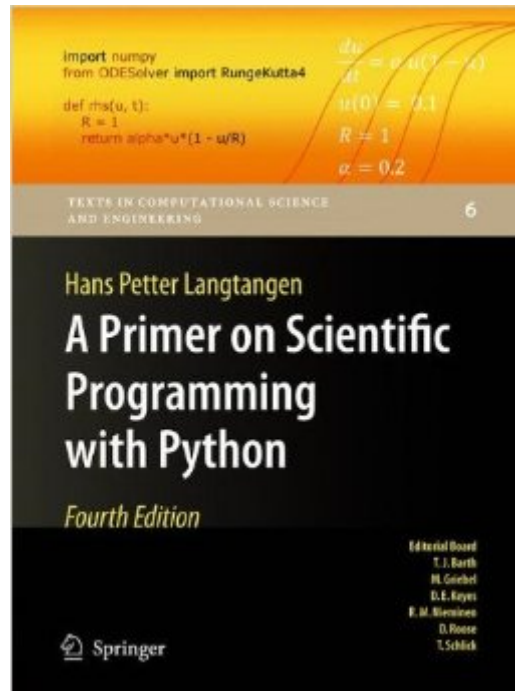


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# A Primer On Scientific Programming With Python (Texts In Computational Science And Engineering)



## Synopsis

The book serves as a first introduction to computer programming of scientific applications, using the high-level Python language. The exposition is example and problem-oriented, where the applications are taken from mathematics, numerical calculus, statistics, physics, biology and finance. The book teaches "Matlab-style" and procedural programming as well as object-oriented programming. High school mathematics is a required background and it is advantageous to study classical and numerical one-variable calculus in parallel with reading this book. Besides learning how to program computers, the reader will also learn how to solve mathematical problems, arising in various branches of science and engineering, with the aid of numerical methods and programming. By blending programming, mathematics and scientific applications, the book lays a solid foundation for practicing computational science. From the reviews: Langtangen | does an excellent job of introducing programming as a set of skills in problem solving. He guides the reader into thinking properly about producing program logic and data structures for modeling real-world problems using objects and functions and embracing the object-oriented paradigm. | Summing Up: Highly recommended. F. H. Wild III, Choice, Vol. 47 (8), April 2010 Those of us who have learned scientific programming in Python | on the streets|™ could be a little jealous of students who have the opportunity to take a course out of Langtangen|™s Primer. | John D. Cook, The Mathematical Association of America, September 2011 This book goes through Python in particular, and programming in general, via tasks that scientists will likely perform. It contains valuable information| for students new to scientific computing and would be the perfect bridge between an introduction to programming and an advanced course on numerical methods or computational science. Alex Small, IEEE, CiSE Vol. 14 (2), March | /April 2012 | |

## Book Information

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## Customer Reviews

After years away from any programming at work I decided to pick it up again. Python was an obvious choice. I started from page 1 and worked my way through all the exercises. Some very tough for me but I kept pushing. Now I can manage myself at work. In that respect I am very happy about the book. It does however have its flaws:- Way too many exercises have errors (e.g. traces from older versions of some exercises)- The structure of the book is a bit confusing. A bit portion of it is appendices which I won't be spending a lot of time on, to name an example. However, those are easy to ignore (they just make the book heavier)- My focus was to learn scripting and put Python into my engineering toolbox at work. Some parts of the book took me away from that objective (but fair enough, I am not blaming the book for this, as it is written for a variety of purposes)- Some exercises seemed to rely on the person to have read the lecture notes from the author, which he presents when he himself teaches his students. Fair enough, they are available on the internet, but it would have been if the book was self-contained, i.e. that the exercises were solely based on the book text and no outside source. That said, for those who want to start from "square one", I can recommend the book. It did a great job with me.-

Clear, valuable, useful! A wonderful intro to Python in general and using it to do science.

GREAT book on practical use of Python in science and engineering.

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