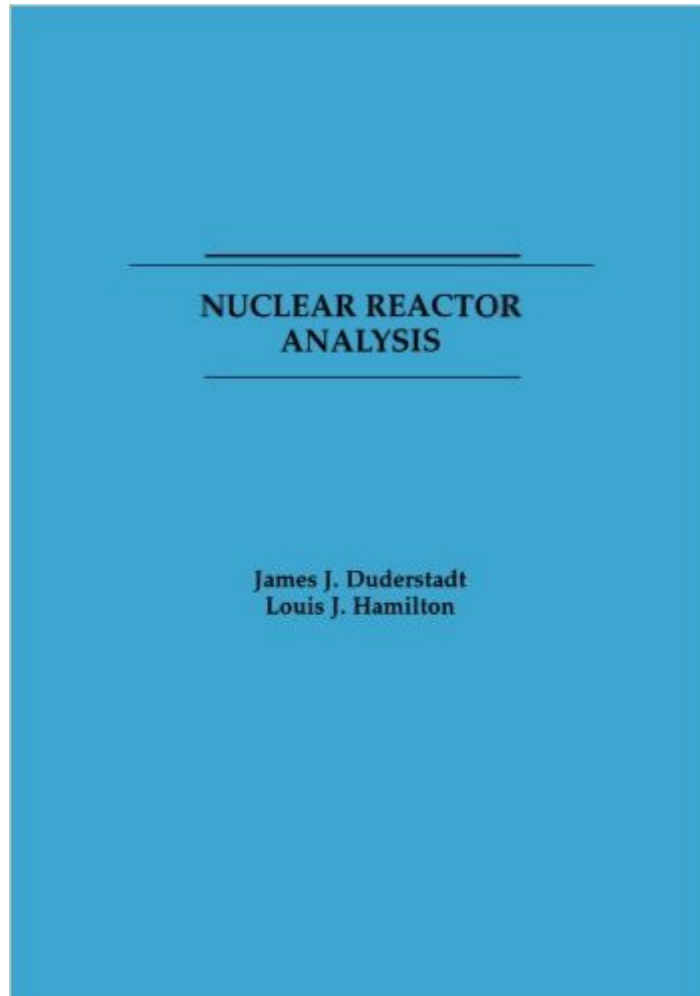


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# Nuclear Reactor Analysis



## Synopsis

Classic textbook for an introductory course in nuclear reactor analysis that introduces the nuclear engineering student to the basic scientific principles of nuclear fission chain reactions and lays a foundation for the subsequent application of these principles to the nuclear design and analysis of reactor cores. This text introduces the student to the fundamental principles governing nuclear fission chain reactions in a manner that renders the transition to practical nuclear reactor design methods most natural. The authors stress throughout the very close interplay between the nuclear analysis of a reactor core and those nonnuclear aspects of core analysis, such as thermal-hydraulics or materials studies, which play a major role in determining a reactor design.

## Book Information

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Average Customer Review: 4.7 out of 5 stars [See all reviews](#) (12 customer reviews)

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## Customer Reviews

This book is one of the two "Bibles" of Nuclear Engineering. LaMarsh's "Introduction to Nuclear Engineering" is the other IMHO. For those interested in a broad overview of Nuclear Engineering, it is my opinion that you should start with the LaMarsh book. Duderstadt's book contains a lot more math and can be difficult to follow without some solid math background and a few Nuc Eng courses under your belt. There are a few cases in the book where a series of equations leading to a conclusion skip a few steps. It's not as bad as the old "A=B and from this we see that  $e = mc^2$ !" joke, but some work is required. That said, this book's drawbacks are also its strengths. It has stood the test of time [my copy is over 20 years old] and will probably remain relevant for another 20 years. It is to my knowledge well prepared and error free, and a must-have for anyone interested in

nuclear reactor engineering.

A good, solid, book for a undergraduate student in nuclear engineering or anyone with a physical sciences background who is interested in learning more about nuclear power operations and analysis. Very clear text with plenty of information on topics (i.e., reactor design) that often confuse students. -Mike Walker Thorsvedt

This is a great introductory textbook for Nuclear Reactor Analysis/ One-Speed diffusion model/Multigroup Diffusion method and core design. It was published a while ago - in 1976, but remains to be one of the best textbook on the topic.

This book is one of the fundamental cornerstones of academic nuclear engineering. I just finished reading it from cover to cover (studying for my phd candidacy exam). The lack of commas after prepositional phrases drove me crazy, but it's definitely a thorough introduction to many different nuclear topics. In my opinion, it's getting a little dated. For example, the first page says "It is anticipated that some 500 nuclear power plants will be installed in the United States alone by the year 2000...". The book is nearly 40 years old now, but a suitable replacement just isn't out there. I also see a lot of room for improvement on the questions at the end of each chapter - they're often too vague and high-level. Regardless, I highly recommend this book for any future nuclear engineer's textbook collection. It shouldn't be used as an undergraduate textbook (though it was for me, unfortunately). If you're looking for an easier textbook with the same material, I highly suggest "Introduction to Nuclear Engineering" by Lamarsh.

Because this book contains adequate physics and mathematics for a good overview introduction to nuclear fission reactor physics/engineering I consider it as an excellent book in its theme. However I think it will be good to include also information on nuclear fission reactors electronic systems, etc. From Joseph-Christos Kondylakis: you may be interested about my scientific research mentioned in the scientific article with the title "Theoretically and under very special applied conditions a nuclear fission reactor may explode as nuclear bomb" by Joseph-Christos Kondylakis, published in the scientific proceedings of the Hellenic Nuclear Physics Society (HNPS) in its 19th scientific symposium held at the Aristotle University of Thessaloniki, Greece, on 28-29 May 2010. This proceedings exists also in the Internet site:

<http://nuclpart.phys.uoa.gr/HNPS/Files/ANP2010.pdf>

This is a must have book for anyone studying nuclear engineering or reactor physics. Duderstadt takes a very understandable approach to these topics which by necessity can be very complicated. The book is very easy to read compared to other texts on the subject. If you are in the field, you need to own this book.

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