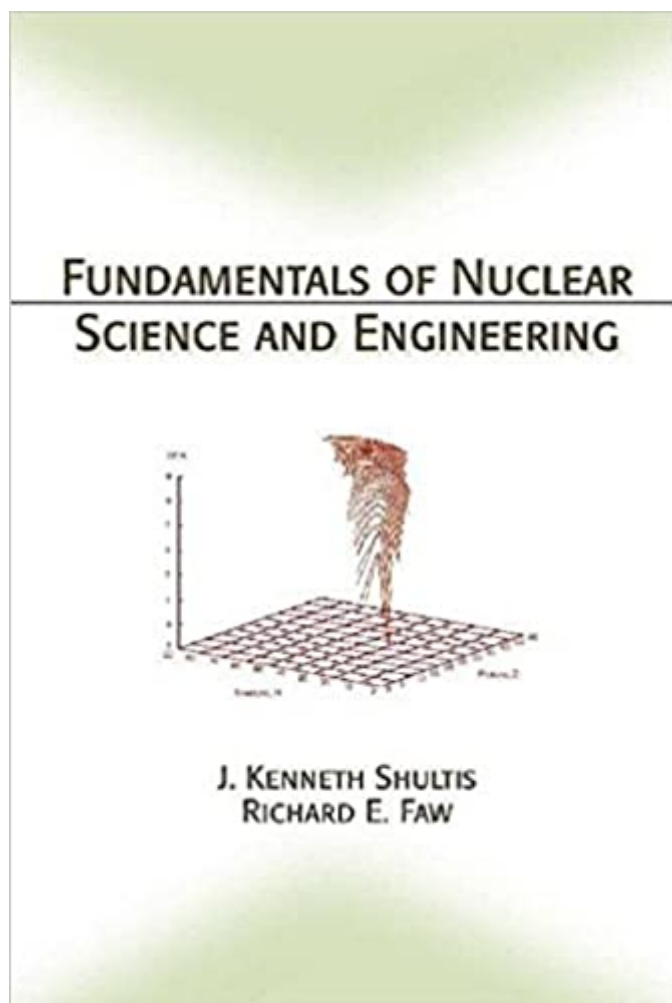


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# Fundamentals Of Nuclear Science And Engineering



## Synopsis

Fundamentals of Nuclear Science and Engineering provides an ideal introduction to the subject. The first half of the text reviews the important results of "modern" physics and introduces the fundamentals of nuclear science. The second half introduces the theory of nuclear reactors and its application in electrical power production and propulsion. It also surveys many other applications of nuclear technology encountered in space research, industry, and medicine. Each chapter contains extensive problem sets, and appendices at the end of the text furnish large amounts of practical data that enable students to perform a wealth of calculations. Among the myriad concepts, principles, and applications addressed in this text, Fundamentals of Nuclear Science and Engineering Describes sources of radiation, radiation interactions, and the results of such interactions Summarizes developments in the creation of atomic and nuclear models Develops the kinematics and energetics of nuclear reactions and radioactivity Identifies and assesses biological risks associated with ionizing radiation Presents the theory of nuclear reactors and their dynamic behavior Discusses the design and characteristics of modern nuclear power reactors Summarizes the nuclear fuel cycle and radioactive waste management Describes methods for directly converting nuclear energy into electricity Presents an overview of nuclear propulsion for ships and space crafts Explores the use of nuclear techniques in medical therapy and diagnosis Covers basic concepts in theory of special relativity, wave-particle duality, and quantum mechanics Fundamentals of Nuclear Science and Engineering builds the background students embarking on the study of nuclear engineering and technology need to understand and quantify nuclear phenomena and to move forward into higher-level studies.

## Book Information

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## Customer Reviews

But why only 4 stars? There is no answer for problems! But this is a "common disease" in nuclear eng. textbooks, in my humble and limited opinion & sample size. The authors give clear explanations and derivations are good too. I really suggest it as an nuclear introductory course for anyone, also not nuclear engineering students. I have tried Lamarsh before, but it is hard to follow. Duderstadt & Hamilton is great too, but it deals "only" with reactors.

great!

This book overall does a good job discussing the required theory for nuclear engineering, and then discusses several applications. Some of its discussion is a little hard to follow, but that's likely due to the quantum mechanical nature of the material, not the author.

A good textbook for scientists and graduate engineers.

Really great textbook for the fundamental principles of nuclear science!! Recommend greatly.

Fundamentals of Nuclear Science and Engineering is a perfect introduction to the field. It starts gently enough so that anyone with a basic high school understanding of chemistry and physics can easily pick up the quantitative and qualitative ideas behind the operations of subatomic particles. The graphics are an appropriate companion to the text and the indices and appendices are extremely useful for performing calculations. The only potential downside would regard the end of chapter problems tending towards a "plug and chug" nature.

Perfect.

Junior in Mechanical Engineering. Pulled a B in the class no thanks to this awful text. Subjects in this book are very convoluted. Example problems often have pre made assumptions that are never stated making the problems hard to follow. Good luck if you are required to use this book for your class.

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