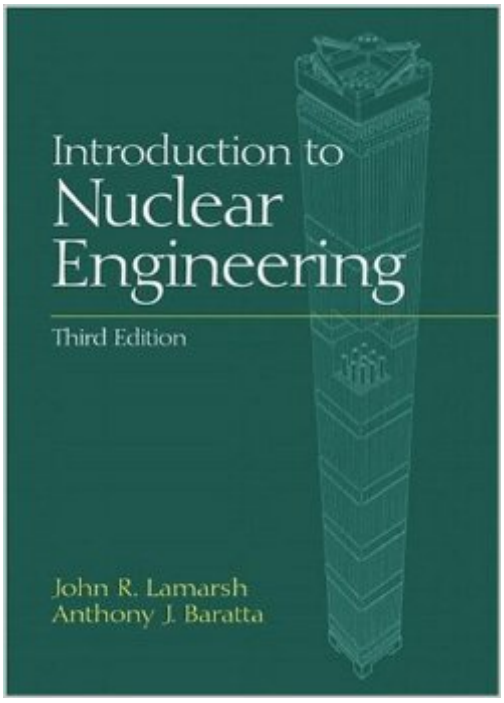
Introduction To Nuclear Engineering (3rd Edition)



Synopsis

Offering the most current and complete introduction to nuclear engineering available, this book contains new information on French, Russian, and Japanese nuclear reactors. All units have been revised to reflect current standards. Includes discussions of new reactor types including the AP600, ABWR, and SBWR as well as an extensive section on non-US design reactors; the nuclear Navy and its impact on the development of nuclear energy; binding energy and such topics as the semi-empirical mass formula and elementary quantum mechanics; and solutions to the diffusion equation and a more general derivation of the point kinetics equation. Topics in reactor safety include a complete discussion of the Chernobyl accident and an updated section on TMI and the use of computer codes in safety analysis. For nuclear engineers.

Book Information

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Customer Reviews

As a textbook for teaching the fundamentals of nuclear engineering, the Lamarsh-Baratta text is horrible. It is riven with errors in the text and examples (and we are using the 3rd edition), the questions are infuriatingly vague at times and in general it does a poor job of explaining an admittedly difficult subject.Regarding the large numbers of typos, I and my classmates had to search the web for an errata sheet and even then we continue to find errors such as formulae written incorrectly and wrong values for constants.As for being vague, this text makes you assume many things. A favorite example is a problem early in the text where we not only have to assume neutron energies, we also had to assume fuel type. Then we have to assume energy released per

fission and somehow come up with an answer we can be confident in. Ridiculous.The examples are hit and miss - occasionally they are helpful, an omission I am sure that will be corrected in the 4th edition.We find ourselves relying on outside texts and materials much of the time to supplement this poorly written textbook.EDIT ADDED TWO YEARS LATER - Now with perspective from the job world...After graduating and entering the work force, I mostly stand by the above. I will admit that I do have my copy still with me. It does provide the occasional useful overview of a wide breadth of topics.I must once again point out the many errata. I still regard it as inexcusable even though I know mistakes do happen - but this is the 3rd edition.Another thing that would be enormously useful would be if the next edition included units. When teaching this subject, watching how units cancel out or are used can be very, very helpful to undergrad students.

First, the caveat to my review: I am probably unique among the reviewers of this book in that I am not a nuclear engineer. I have a strong educational and professional background in chemistry, physics, and math, and have been working on projects involving engineered safety systems and risk management in other technologically advanced industries. I have recently become involved in talks with representatives from the nuclear industry. For my own preparation I undertook the long hard slog through the Lamarsh-Baratta book, "Introduction to Nuclear Engineering" (Third Edition) to help me grasp background information and concepts in this field. Although I was sometimes initially unclear about the use of units (barns, dollars, etc.) and nomenclature (meat, safe shutdown earthquake, etc.) I generally found the text to eventually explain them adequately. One critique is that at some points in the text the authors use terminology freely without first defining it, only to define it much later. I found this and the relatively large number of typographical errors to be distracting.This is clearly a very complex subject, and would no doubt be helped by good classroom instruction. Nonetheless, I still found considerable value in the book. I liked chapter seven, "The Time-Dependent Reactor" particularly well, and especially found sections 7.3 and 7.5 "Control Rods and Chemical Shim" and "Fission Product Poisoning" to be enlightening. I found the commentary on reactor stability and the explanation of post-shutdown Xenon-135 buildup and reactor deadtime extremely helpful. I also found section 7.6 on incore fuel management useful.From my experience in aviation (where it is a common parameter), I enjoyed the discussion of the utility of the Reynolds number in section 8.

Edition) Nuclear Energy, Seventh Edition: An Introduction to the Concepts, Systems, and Applications of Nuclear Processes Nuclear War Survival Skills (Upgraded 2012 Edition) (Red Dog Nuclear Survival) Nuclear War Survival Skills: Lifesaving Nuclear Facts and Self-Help Instructions Nuclear Weapons Databook: Volume I - U.S. Nuclear Forces and Capabilities NUCLEAR WAR SURVIVAL MANUAL, PROTECTION IN THE NUCLEAR AGE Modern Ceramic Engineering: Properties, Processing, and Use in Design, 3rd Edition (Materials Engineering) Fundamentals of Nuclear Science and Engineering Second Edition G.Dieter's Li.Schmidt's Engineering 4th (Fourth) edition(Engineering Design (Engineering Series) [Hardcover])(2008) Nuclear Reactor Engineering Handbook of Nuclear Engineering (5 Vol set) Earthquake Engineering: From Engineering Seismology to Performance-Based Engineering Fundamentals of Earthquake Engineering (Civil engineering and engineering mechanics series) Tissue Engineering I: Scaffold Systems for Tissue Engineering (Advances in Biochemical Engineering/Biotechnology) (v. 1) Transportation Engineering: An Introduction (3rd Edition) Exploring Engineering, Third Edition: An Introduction to Engineering and Design An Introduction to Nuclear Materials: Fundamentals and Applications Ethics of Nuclear Weapons: A Very Brief Introduction