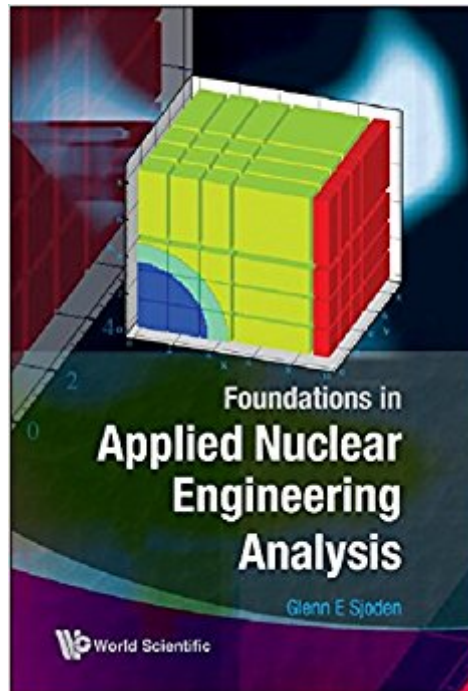




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# Foundations In Applied Nuclear Engineering Analysis



## Synopsis

This text addresses a number of technical skills in mathematics, physics, and specific areas of nuclear engineering that will prepare the student for optimum performance in any nuclear engineering or medical physics curriculum. The book opens with fundamentals in probability and statistics, ODEs, series solutions, general differential equations, numerical methods, up through PDEs, and incorporates modeling and simulation, radiation, heat transfer, neutron diffusion problems, advanced solution methods, and engineering problem solving. The book specifically focuses on examples in nuclear and radiological engineering, and is thus a unique text for nuclear engineering students. A course using the book may range from three to four credits. Several applications in Mathematica are written to illustrate technical concepts.

**Nuclear Engineering Analysis Essentials of Probability Introduction to Numerical Concepts and Applications Complex Numbers Fundamentals Methods for Solving Ordinary Differential Equations Applications of Power Series Solution Methods for Differential Equations with Variable Coefficients Vectors, Matrices, and Linear Systems Gram-Schmidt Orthogonalization and Fourier Series Applied Solution Methods -- Part 1 Applied Solution Methods -- Part 2 Numerical Solutions of Partial Differential Equations Appendix: Selected Problems in Applied Nuclear Engineering Analysis**

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Good "grab-bag" of mathematical techniques and applications that appear in nuclear engineering; covers all the needed basics and strongly focuses on practical examples rather than pure theory. Examples covered also apply very specifically to nuclear engineering-solutions to the diffusion & heat equations, for example.

This is basically Reactor Physics for Dummies. Concepts are explained in language that any undergrad can understand, with no useless derivation or obscure formulas. Definitely buy this book!

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