Preface

This is a text developed for nuclear engineers and medical physicists as part of a very applied course in mathematical physics methods for nuclear engineers. The course in *Nuclear Engineering Analysis* that follows this text is taught at the University of Florida every fall semester. The book covers a one semester course that addresses applied mathematics concepts, analytical, and computational problem solving skills essential for subjects such as reactor physics, radiation transport, heat transfer, numerical modeling, and most of major skills needed in a nuclear engineering curriculum. While certain topics are covered only tangentially, others are covered in depth to target the appropriate amalgam of topics to cover most essential subjects expected for success in navigating nuclear related disciplines. It is assumed that students have familiarity with undergraduate engineering mathematics and physics, and are ready to apply those skills to problems in nuclear engineering; applications and problem sets in the appendix are directed toward problems in nuclear science. Software Examples and programming are emphasized throughout the course, since computational capabilities are essential for new engineers. I would like to acknowledge assistance in typing some of the equations and content by Michael Wayson, and some contributions of content by Eric LaVigne. I also thank the students of ENU 4001 for helping to edit content and provide feedback on topics that required additional emphasis. Finally, I thank God and my family for the support they provided me in assembling the text. My goal has always been to better educate our future nuclear engineers for a better tomorrow.

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