

Preface

Welcome to *Electricity and Magnetism for Amateur Radio and Wireless Technology*! This book is designed to teach you about the physics of electricity and magnetism at the introductory undergraduate university level. This book distinguishes itself from other physics textbooks on this topic by placing the subject into the specific context of amateur radio and other wireless technology. Ideally, you will be learning about electricity and magnetism and also preparing to become an amateur radio operator at an entry-level (e.g., Technician class in the United States) at the same time.

No prior experience or knowledge is assumed about electricity or magnetism, but you are expected to have some background in the concepts and practice of Newtonian physics at a college or university level (e.g., [OpenStax University Physics, vol. 1](#), or [College Physics, 2nd ed.](#), Ch. 1–8). This book also assumes some prior knowledge of algebra, geometry, trigonometry, vectors, and differential and integral calculus to understand the mathematical content fully. A background in vector calculus and differential equations will be helpful, but not necessary, as those topics are developed in the text as needed. That said, the book also includes numerous discussions of physics concepts that do not require mathematics to understand or apply, so do not let your math background get in the way of the interesting and amazing physics that awaits!

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Ronald E. Kumon (K8DTJ)
Associate Professor of Physics
Kettering University