

**Cember / INTRODUCTION TO HEALTH PHYSICS 4E / 0071423087,
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This marks the 4th edition update of this old standby for practicing health physicists and students. This edition has fourteen chapters as before; however, the number of problems at the end of each chapter has been increased. The content has been updated and the tables and graphics are in an updated format. The example problems in each chapter have also been formatted differently so they stand out from the text and are easier to relocate when you search for one. Additionally, most of the previous errata appear to have been corrected.

The first noteworthy update occurs in Chapter 4 (Radiation Sources), where the naturally occurring radioactivity discussion has been reorganized and a good table on radioactive concentrations in building materials has been added. There is a new section on sources of radiation, which has brief discussions of x-ray tubes, cyclotrons, and linear accelerators.

Chapter 5 on radiation interactions includes several updates, the most obvious of which is an expanded discussion of x-ray production. Again there are more problems at the end of the chapter. Chapter 6 on radiation dosimetry also has additional problems and Chapter 7 (Biological Basis for Radiation Safety) has some sections on epidemiology added. The tables in Chapter 6 are much more readable than in the previous edition, making the presentation crisper. Unfortunately the textbook does not have the 2007 recommendations of the International Commission on Radiological Protection (ICRP) released in Publication 103, although it does have the radiation factors from ICRP Publication 92.

ICRP Publication 66 is now discussed in Chapter 8 (Radiation Safety Guidelines) with an example of the computation of lung dose for particulate and gasses. Chapter 9 on instrumentation contains many updates. There is still a discussion of pocket dosimeters, but no figures related to them. A discussion of optically-stimulated luminescence (OSL) has been added to Chapter 9. The photographs for neutron instruments are not good reproductions but serve their purpose adequately.

Chapter 10 has included a discussion of the latest in medical radiation facility shielding from National Council on Radiation Protection and Measurements (NCRP) Report 147. This professor, for one, is glad that someone has waded through the report, and the related tables and graphs seem to be instructive. Many of the figures including the transmission curves are not sharply reproduced, but they can still be easily read to extract data. The updated Chapter 10 contains sample problems using NCRP 147, which are very instructive.

Chapter 11 (Internal Radiation Safety) has a radon subsection, Assessment of Hazard, and also contains a useful radon calculation example. Dated photographs and examples have been replaced with their modern equivalents. Some of the figures, like the temperature gradient in the atmosphere figure, are not sharp. Chapters 12 and 13 have minor changes.

Chapter 14 on nonionizing radiation has been rewritten by Johnson. There is now a section on UV light. This chapter should prove to be quite helpful for the health

physicists who need to know something about nonionizing radiation. The number of example problems on laser and radiofrequency (RF) has been increased.

The appendices have been reformatted, making the tables friendlier to use. The appendices do not have titles in their headings but are titled in the Table of Contents, and the contents are straightforward. In Appendix D, only the absorbed fractions for several energy photons for the source in the bladder contents are given, not for multiple sources as in the previous edition.

Overall the book in its 4th edition is one that will continue to serve to educate health physics students and assist in preparing professionals to take the certification examination, while maintaining its position as reference to practicing health physicists. The newly formatted tables, figures and example problems greatly increase the ability to rapidly thumb through the book when looking for a specific topic, set of data, or example calculations.

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