Introduction to Health Physics: Fourth Edition

Herman Cember, Thomas E. Johnson
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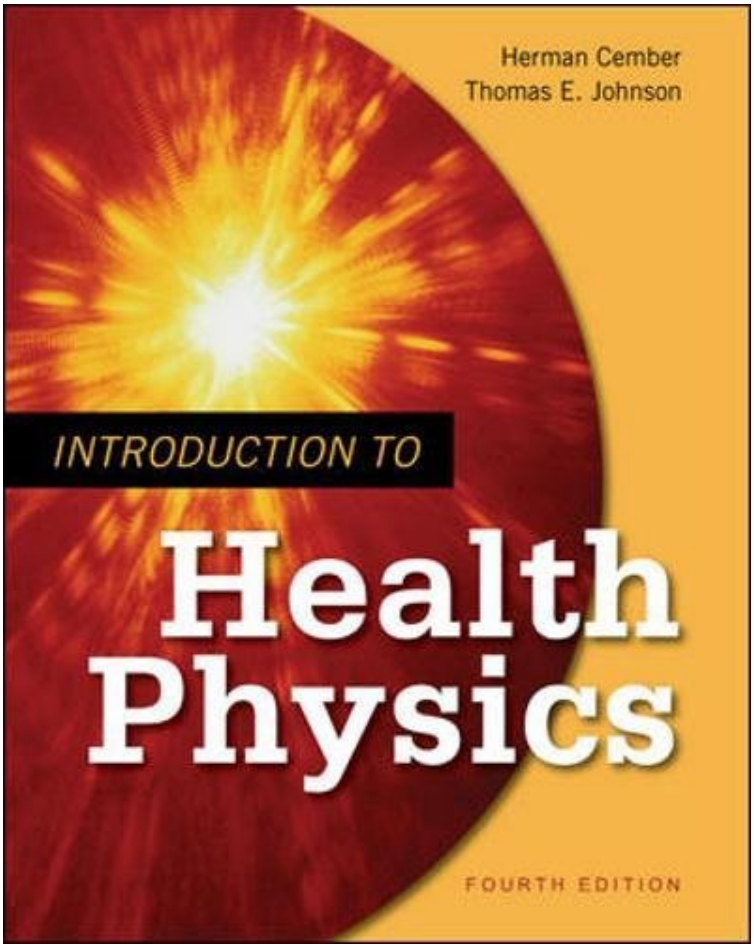

#516800 in Books imusti 2008-08-15Ingredients: Example IngredientsOriginal language:EnglishPDF # 1 9.00 x 1.25 x 7.30l, 2.73 #File Name: 0071423087864 pagesIntroduction to Health Physics Fourth Edition | File size: 25.Mb

Herman Cember, Thomas E. Johnson : Introduction to Health Physics: Fourth Edition before purchasing it in order to gage whether or not it would be worth my time, and all praised Introduction to Health Physics: Fourth Edition:

7 of 7 people found the following review helpful. Health Physics without the physicsBy Delvan NevilleEdit: It had come to my attention that this review is appearing for the 4th edition. Please note that my review pertains to the 3rd edition!Original review: I purchased this book as a required text when I was still an undergrad, for a class in Radiation Protection. It's peppered with initial equations that are thumb-rules, and I'm not just talking about the well known empirical thumb rules like ZE/800 = (dE/dx) rad/ (dE/dx) colHere's an example:If you want to find the specific activity of a nuclide, Cember uses the definition of the Curie to cancel a couple constants (ln(2) and Na) and instead include a second GAW and half-life to look-up or memorize. (GAW of Radium * Half-life of Radium) / (GAW of the nuclide * Half-life of the nuclide) = Activity (in Ci/g)Other authors of health physics texts, like Schultis Faw or Martin, define

the activity as decay constant * Avagadro's number / gram atomic weight = Activity (in disintegrations per unit time per gram, where the time is in whatever unit you used for the decay constant. Use seconds to get activity in Bq).Cember's formula is useful for back-of-the-envelope problems as it's easier to do without a calculator (e.g. if you haven't memorized ln(2) to a few sig figs). However, the other formula is the actual definition of specific activity. If you know what specific activity means, you can probably come up with that formula by simply writing out the mathematical equivalent of the definition.If you're a student, and this is the text book for your class, grab it for sure. Many of the formulae you'll see in lecture (assuming your lectures are derived from this text) won't look the same in an alternate text that starts with proper physical laws. For instance: wavelength" = 12400/eV in Cember is really wavelength = hc/E, but with the constants substituted in already (and no way from looking at the formula to tell what the units are for Cember's answer -- in this case, it's Angstroms).If you're the instructor or a board advisee selecting the textbook for your class? I'd recommend considering the alternatives. The only real advantage to Cember's approach is it saves your students from doing unit conversion and some algebra, and in exchange they just have to annotate all the thumb-rules on their equation sheets with the resulting units, since you can't decide the system just by looking at the formula. But honestly, you can save your students the same amount of time by listing some common modern physics constants with the unit conversion in place. For the wavelength example, that'd be that hc = 1240 MeV fm.(Oh, and ignore the Reference Woman data...Cember claims she is ridiculously short)0 of 0 people found the following review helpful. Poor, shocked by the positive reviewsBy AnnonSome of the chapters are just awful, and the ubiquitous errors and stupid introduction of random useless constants does not help. Some chapters are good. I would look for an alternative. How can a 4th edition have so many mistakes! Some errors are even conceptual. I am surprised so many reviews are positive. We used the book for a class and no one was satisfied; the faculty teaching will look for a different book to use next year.0 of 0 people found the following review helpful. Introduction to Health Physics, Herman Cember andBy Steven GoetschI begin by admitting my bias: Professor Cember was my master's thesis advisor at Northwestern University from 1972 to 1974. He was the most precise person I ever met. He was distressed at typographical errors in the first edition, published about 1972. He would be proud to know that his text has endured for 40 years. This book has stood the test of time. It is recommended reading at the Dade Moeller Training Academy where I now teach. I think it makes an excellent textbook as well as an outstanding reference book. It joins a small group of physics and medical physics textbooks that have become classics over the years.

A dynamic, all-inclusive overview of the field of health physics A Doody's Core Title for 2011! If it's an important topic in the field of health physics, you'll find it in this trusted text . . . in sections on physical principles, atomic and nuclear structure, radioactivity, biological effects of radiation, and instrumentation. This one-of-a-kind guide spans the entire scope of the field and offers a problem-solving approach that will serve you throughout your career. Features: A thorough overview of need-to-know topics, from a review of physical principles to a useful look at the interaction of radiation with matter More than 380 "Homework Problems" and 175+ "Example Problems" Essential background material on quantitative risk assessment for radiation exposure Authoritative radiation safety and environmental health coverage that supports the International Commission on Radiological Protection's standards for specific populations High-yield appendices to expand your comprehension of chapter material NEW! Essential coverage of non-ionizing radiation, lasers and microwaves, computer use in dose calculation, and dose limit recommendations

"Overall, this is a good introductory health physics book for students in health and medical physics and could be used as a study guide and reference by health and medical physicists. The fourth edition has improvements and updates over the third edition, including the addition of NCRP 147 shielding methodology and ICRP 66 respiratory tract dosimetric model, the discussion of machine sources of radiation, and a revamped chapter on non-ionizing radiation."--"Doody's Service,"About the AuthorHerman Cember, PhD, is Professor Emeritus, Northwestern University, Evanston, IL. Thomas E. Johnson, PhD, is Assistant Professor in the Department of Environmental and Radiological Health Sciences at Colorado State University, Fort Collins, CO.