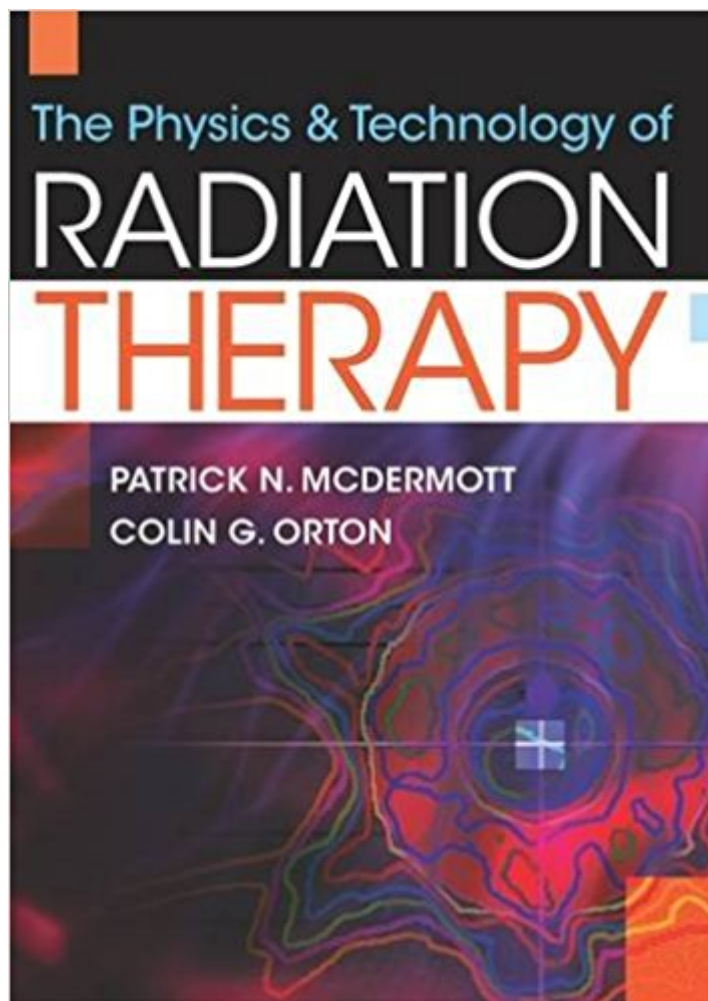


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# The Physics & Technology Of Radiation Therapy



## Synopsis

This textbook is an introduction to the physics and technology used in radiation therapy. It is the outgrowth of a course taught to medical residents in radiation oncology and it has been classroom tested over many years. Every effort has been made to make explanations clear and simple without oversimplifying. The book has been designed to be interesting to read as well as clinically relevant. The first half of the book contains the radiation physics necessary to understand radiation therapy. The second half of the book covers the applied physics and technology of radiation therapy. Topics include: treatment machines, beam calibration, dosimetric parameters, MU calculations, dose distributions in patients, electron beams, brachytherapy, radiation safety, quality assurance, imaging, and special modalities. Features: \* Comprehensive end of chapter summaries \* "Rules of thumb" \* Numerous example-problems \* Full problem set for each chapter with selected answers \* Clinically realistic linac dosimetry data for practice MU calculations \* ABR physician board certification physics topic matrix \* ARRT exam topic matrix

## Book Information

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Patrick McDermott received a Ph.D. in Physics and Astronomy from the University of Rochester in 1985 and a masters degree in Radiological Physics from Wayne State University in 1993. He was board certified by the American Board of Medical Physics in 1997. He has been a practicing clinical medical physicist for twenty years, first at the Karmanos Cancer Institute in Detroit and currently at the William Beaumont Health System in Royal Oak Michigan. McDermott is an adjunct Associate Professor at Wayne State University and at Oakland University. He taught in the Wayne State University graduate medical physics program from 1993 to 2005. He has been teaching medical residents for almost twenty years. He won teaching awards for teaching residents in 2004 and in 2006. He is the author of eight peer reviewed papers in medical physics.

I had to undergo radiation therapy and, because it was a big deal to me, I needed to understand as best I could what they were doing to me. This book helped me do that. This book is at a beginner's level for the physics but does explain the technologies being used at my hospital. The information in the book certainly allowed me to ask more rational questions of my radiologists and of my clinical physicists.

Great Book for the physics course taught in all radiation oncology residencies - just the right level and written in plain English. Supplement with additional resources as needed, but gives a good

foundation without overdoing it.

Good book for any resident in radiation oncology. However I would recommend to go through 'Applied Physics for Radiation Oncology' by Stanton & Stinson before going through this one.

This book is very informative and detailed on the physics aspect of the radiation therapy. It is worth the price paid for it.

It's a good book, but its content does not meet my expectation. Anyway, I will buy other books later.

I teach this subject, and this is by far the BEST TEACHING book I've seen in the past few years, since I began teaching. It is written in plain English, with descriptions and narratives that anyone can understand. The authors did a FANTASTIC JOB! They even include a math review that I feel they took directly from my lecture! All the math formulas are explained, and I see all the little hints and tips, present in the text, that are usually left out of text books, but that I always give my students to help them learn. I've been teaching radiation therapy physics courses to students in medical dosimetry and radiation therapy academic programs. When I myself took the course as a student, we used Khan. Coming from a physics degree background, it was ok, but I could tell that the other students struggled with the terminology and math. Once I graduated and took over teaching the course (2 years later) I started using Hendee (not well-organized, and important items are difficult to locate because they are in the middle of large paragraphs), and supplementing with Khan's Lectures (small, summarized version of the main physics book by Khan, love the color pictures). Even with that, I have still felt disappointed with all the books I've seen. Then, one day, the program director from one of the programs bought this book (she's always on the lookout) and left it on my chair. I have been ranting and raving about it ever since, showing it off to last year's students as well as coworkers, and I can't WAIT to use it next year! I'm even going to update all my lectures to coincide with the the book. One recommendation I have is to eventually get it in full color, and make it available on Kindle. My students carry so many books and notes, that having access to it on their smart phones or iPads would be so practical. I know that many professionals would love to have instant access to it via a smart phone, while on the job or teaching in the clinic. THANK YOU TO THE AUTHORS, YOU HAVE MADE LEARNING PHYSICS SO MUCH MORE ACCESSIBLE TO SO MANY STUDENTS! (and made my job that much easier - you have been in my shoes, and have accomplished something great)

The Physics & Technology of Radiation Therapy textbook by McDermott and Orton is a must have for a radiation oncology resident. Unlike Khan that is full of derivatives and formulas, this book is actually written in plain language, has photographs of equipment, helpful hints, and has excellent example questions throughout. It's also written with the physics board exam (the ABR) in mind so all of the topics are covered with references in the appendix. I highly recommend it.

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