

Bushberg 3rd Edition

Physics in Nuclear Medicine
Linear Accelerators for Radiation Therapy
Physics and Radiobiology of Nuclear Medicine
Radiobiology for the Radiologist
The Physics of Radiology and Imaging
Radiation Physics for Medical Physicists
Hendee's Physics of Medical Imaging
Introduction to Biomedical Imaging
MRI from Picture to Proton
Diagnostic MRI in Dogs and Cats
The Physics of Radiation Therapy
The Essential Physics of Medical Imaging
The Physics of Medical Imaging
MRI of the Temporomandibular Joint
Grainger and Allison's diagnostic radiology
Hip Magnetic Resonance Imaging
Physics in Nuclear Medicine E-Book
Springer Handbook of Medical Technology
Review of Radiologic Physics
Farr's Physics for Medical Imaging
Khan's The Physics of Radiation Therapy
Hendee's Radiation Therapy Physics
Teaching Atlas of Abdominal Imaging
The Essential Physics of Medical Imaging
Essential Radiology Review
Medical Imaging Physics
The Physics and Technology of Diagnostic Ultrasound: A Practitioner's Guide (Second Edition)
FRCR Physics MCQs in Clinical Radiology
Essentials of Radiographic Physics and Imaging - E-Book
MDCT Physics: The Basics
Thoracic Imaging
Musculoskeletal Ultrasound
Musculoskeletal Imaging: A Core Review
Christensen's Physics of Diagnostic Radiology
Basic Clinical Radiobiology
Felson's Principles of Chest Roentgenology E-Book
Brachytherapy
Medical Imaging Signals and Systems
Fundamentals of Medical Imaging
Computed Tomography

Physics in Nuclear Medicine

Popular for its easy-to-use format, Felson's Principles of Chest Roentgenology remains the must-have primer of chest radiology. With the inclusion of the latest imaging approaches and terminology, its unique programmed learning approach—presented in a highly interactive style—demystifies reading and interpreting radiologic images. High-quality images and diagrams are accompanied by multiple-choice review questions to reinforce key concepts. Additional online images plus self-assessment tests help you sharpen your skills and build confidence! Consult this title on your favorite e-reader! Quickly grasp the radiology fundamentals you need to know—including basic science, image interpretation, and terminology—with the popular "programmed learning" approach, which promotes fast learning and reference. Discern the nuances between modalities by comparing CT and MR images as well as traditional radiographs. View detailed clinical images covering all the image types you'll see on the boards including digital quality radiographs and an introduction of PET imaging, plus more advanced imaging such as CT and MRI than ever before. Test your skills and simulate the exam experience with updated content aligned with the new MCQ-format Board exam for easy preparation and review. Benefit from more robust interactive offerings in an e-book format.

Linear Accelerators for Radiation Therapy

Physics in Nuclear Medicine - by Drs. Simon R. Cherry, James A. Sorenson, and Michael E. Phelps - provides current, comprehensive guidance on the physics underlying modern nuclear medicine and imaging using radioactively labeled tracers. This revised and updated fourth edition features a new full-color layout, as

well as the latest information on instrumentation and technology. Stay current on crucial developments in hybrid imaging (PET/CT and SPECT/CT), and small animal imaging, and benefit from the new section on tracer kinetic modeling in neuroreceptor imaging. What's more, you can reinforce your understanding with graphical animations online at www.expertconsult.com, along with the fully searchable text and calculation tools. Master the physics of nuclear medicine with thorough explanations of analytic equations and illustrative graphs to make them accessible. Discover the technologies used in state-of-the-art nuclear medicine imaging systems Fully grasp the process of emission computed tomography with advanced mathematical concepts presented in the appendices. Utilize the extensive data in the day-to-day practice of nuclear medicine practice and research. Tap into the expertise of Dr. Simon Cherry, who contributes his cutting-edge knowledge in nuclear medicine instrumentation. Stay current on the latest developments in nuclear medicine technology and methods New sections to learn about hybrid imaging (PET/CT and SPECT/CT) and small animal imaging. View graphical animations online at www.expertconsult.com, where you can also access the fully searchable text and calculation tools. Get a better view of images and line art and find information more easily thanks to a brand-new, full-color layout. The perfect reference or textbook to comprehensively review physics principles in nuclear medicine.

Physics and Radiobiology of Nuclear Medicine

The Fourth Edition of this text provides a clear understanding of the physics principles essential to getting maximum diagnostic value from the full range of current and emerging imaging technologies. Updated material added in areas such as x-ray generators (solid-state devices), xerography (liquid toner), CT scanners (fast-imaging technology) and ultrasound (color Doppler).

Radiobiology for the Radiologist

The Physics of Medical Imaging reviews the scientific basis and physical principles underpinning imaging in medicine. It covers the major imaging methods of x-radiology, nuclear medicine, ultrasound, and nuclear magnetic resonance, and considers promising new techniques. Following these reviews are several thematic chapters that cover the mathematics of medical imaging, image perception, computational requirements, and techniques. Throughout the book, the author encourages readers to consider key questions concerning imaging. This profusely illustrated and extensively indexed text is accessible to graduate physical scientists, advanced undergraduates, and research students. It logically complements books on applications of imaging techniques in medicine, making it useful for clinicians as well.

The Physics of Radiology and Imaging

Written by the chief physicist at Johns Hopkins University Hospital, this easy-to-read short textbook explains the physics behind multi-detector CT technology, particularly newer, more complex technology. The focus is on principles of physics, effects of scan parameters on image quality, and optimum radiation dosage. The

book includes numerous key points summaries and questions to assist in exam preparation.

Radiation Physics for Medical Physicists

Previous ed. published as: Physics for medical imaging / R.F. Farr. c1997.

Hendee's Physics of Medical Imaging

An approachable textbook for medical practitioners and technologists studying to become ultrasound practitioners. Written by a leading ultrasound educator and designed to suit typical university, college or professional courses. Also appropriate for self-guided study. The first edition of this book sold over 5000 copies. This second edition brings the content up to date, while retaining the style and chapter structure of the first. Many sections have been rewritten, new material has been introduced and some outmoded material removed. As before, a Study Guide has been developed to complement the text.

Introduction to Biomedical Imaging

Explains principles, instrumentation, function, application and limitations of all radiological techniques. Presented from perspective of medical physicists. Highly useful for postgraduates in medical physics and radiology, and FRCR candidates.

MRI from Picture to Proton

Musculoskeletal Imaging: A Core Review will consist of approximately 300 musculoskeletal radiology questions, in the format similar to the core exam. High quality radiographs, CT, MRI, and ultrasound images will be included. Answers to the questions will be discussed in a concise manner with explanations for why a particular answer choice is correct and the remaining answer choices are incorrect. Literature references will be provided for each answer explanation, so a reader will know where to go for further reading on the subject. This will be the first review book available to radiology residents preparing for the new core exam. Key Features 1st MSK review book geared to prep for the new ABR exam 300 Questions Answers to the questions discussed in a concise manner with explanations for why a particular answer choice is correct and the remaining answer choices are incorrect High quality radiographs, CT, MRI, and ultrasound images included

Diagnostic MRI in Dogs and Cats

This renowned work is derived from the authors' acclaimed national review course ("Physics of Medical Imaging") at the University of California-Davis for radiology residents. The text is a guide to the fundamental principles of medical imaging physics, radiation protection and radiation biology, with complex topics presented in the clear and concise manner and style for which these authors are known. Coverage includes the production, characteristics and interactions of ionizing radiation used in medical imaging and the imaging modalities in which they are used, including radiography, mammography, fluoroscopy, computed tomography

and nuclear medicine. Special attention is paid to optimizing patient dose in each of these modalities. Sections of the book address topics common to all forms of diagnostic imaging, including image quality and medical informatics as well as the non-ionizing medical imaging modalities of MRI and ultrasound. The basic science important to nuclear imaging, including the nature and production of radioactivity, internal dosimetry and radiation detection and measurement, are presented clearly and concisely. Current concepts in the fields of radiation biology and radiation protection relevant to medical imaging, and a number of helpful appendices complete this comprehensive textbook. The text is enhanced by numerous full color charts, tables, images and superb illustrations that reinforce central concepts. The book is ideal for medical imaging professionals, and teachers and students in medical physics and biomedical engineering. Radiology residents will find this text especially useful in bolstering their understanding of imaging physics and related topics prior to board exams.

The Physics of Radiation Therapy

Want to increase your imaging capabilities exponentially? Look no further than Musculoskeletal Ultrasound, an expertly crafted guide to ultrasound and musculoskeletal diagnosis. In this comprehensive book, you'll learn everything you need to know about employing powerful imaging techniques to produce precise and consistent readings. With clearly segmented and organized text, each topic is enhanced and supported by illustrations, photographs, and imaging scans. Assisted by the author and his world-renowned contributors, you'll focus on different parts of the body, as chapter subjects range from the shoulder, to the elbow, to the hand and wrist, as well as the muscles, nerves, and more. Witness how radiology specialists and practitioners are increasing their knowledge and expertise of the anatomy, pathophysiology, clinical presentation, and techniques of this imaging tool. Under the guidance of Musculoskeletal Ultrasound, you can acquire the skills you need to offer insightful, effective imaging diagnosis and outstanding medical treatment.

The Essential Physics of Medical Imaging

Written by the foremost experts in the field, this volume is a comprehensive text and practical reference on contemporary brachytherapy. The book provides detailed, site-specific information on applications and techniques of brachytherapy in the head and neck, central nervous system, breast, thorax, gastrointestinal tract, and genitourinary tract, as well as on gynecologic brachytherapy, low dose rate and high dose rate sarcoma brachytherapy, vascular brachytherapy, and pediatric applications. The book thoroughly describes and compares the four major techniques used in brachytherapy—intracavity, interstitial, surface-dose or mold therapy, and transluminal. Chapters detail particular techniques that are appropriate in specific clinical situations.

The Physics of Medical Imaging

Expand your understanding of the physics and practical clinical applications of advanced radiation therapy technologies with Khan's The Physics of Radiation

Therapy, 5th edition, the book that set the standard in the field. This classic full-color text helps the entire radiation therapy team—radiation oncologists, medical physicists, dosimetrists, and radiation therapists—develop a thorough understanding of 3D conformal radiotherapy (3D-CRT), stereotactic radiosurgery (SRS), high dose-rate remote afterloaders (HDR), intensity modulated radiation therapy (IMRT), image-guided radiation therapy (IGRT), Volumetric Modulated Arc Therapy (VMAT), and proton beam therapy, as well as the physical concepts underlying treatment planning, treatment delivery, and dosimetry. In preparing this new Fifth Edition, Dr. Kahn and new co-author Dr. John Gibbons made chapter-by-chapter revisions in the light of the latest developments in the field, adding new discussions, a new chapter, and new color illustrations throughout. Now even more precise and relevant, this edition is ideal as a reference book for practitioners, a textbook for students, and a constant companion for those preparing for their board exams. Features Stay on top of the latest advances in the field with new sections and/or discussions of Image Guided Radiation Therapy (IGRT), Volumetric Modulated Arc Therapy (VMAT), and the Failure Mode Event Analysis (FMEA) approach to quality assurance. Deepen your knowledge of Stereotactic Body Radiotherapy (SBRT) through a completely new chapter that covers SBRT in greater detail. Expand your visual understanding with new full color illustrations that reflect current practice and depict new procedures. Access the authoritative information you need fast through the new companion website which features fully searchable text and an image bank for greater convenience in studying and teaching. This is the tablet version which does not include access to the supplemental content mentioned in the text.

MRI of the Temporomandibular Joint

Hip Magnetic Resonance Imaging presents a basic yet comprehensive discussion of the role and use of MRI in the diagnosis and treatment of injuries and diseases of the hip, highlighting common concerns and procedures. Beginning with the principles of MRI and dGEMRIC and moving on to normal and abnormal hip anatomy, the focus shifts to the MRI techniques used in the detection of disease conditions of the hip, including labral disease, osteonecrosis, extra-articular conditions and cartilage damage. Chapters on the utilization of biochemical imaging biomarkers in the treatment of hip disorders round out the text. Written by experts in radiology and orthopedics and generously illustrated with MRI radiographs, this book will be an important reference work for clinicians in those fields, as well as practitioners of sports medicine and primary care physicians.

Grainger and Allison's diagnostic radiology

The book is an on-the-spot reference for residents and medical students seeking diagnostic radiology fast facts. Its question-and-answer format makes it a perfect quick-reference for personal review and studying for board examinations and recertification. Readers can read the text from cover to cover to gain a general foundation of knowledge that can be built upon through practice or can use choice chapters to review a specific subspecialty before starting a new rotation or joining a new service. With hundreds of high-yield questions and answer items, this resource addresses both general and subspecialty topics and provides accurate, on-the-spot answers. Sections are organized by subspecialty and body area, including

chest, abdomen, and trauma, and chapters cover the anatomy, pathophysiology, differential diagnosis, hallmark signs, and image features of major diseases and conditions. Key example images and illustrations enhance the text throughout and provide an ideal, pocket-sized resource for residents and medical students.

Hip Magnetic Resonance Imaging

MRI from Picture to Proton presents the basics of MR practice and theory in a unique way: backwards! The subject is approached just as a new MR practitioner would encounter MRI: starting from the images, equipment and scanning protocols, rather than pages of physics theory. The reader is brought face-to-face with issues pertinent to practice immediately, filling in the theoretical background as their experience of scanning grows. Key ideas are introduced in an intuitive manner which is faithful to the underlying physics but avoids the need for difficult or distracting mathematics. Additional explanations for the more technically inquisitive are given in optional secondary text boxes. The new edition is fully updated to reflect the most recent advances, and includes a new chapter on parallel imaging. Informal in style and informed in content, written by recognized effective communicators of MR, this is an essential text for the student of MR.

Physics in Nuclear Medicine E-Book

The book offers a comprehensive and user-oriented description of the theoretical and technical system fundamentals of computed tomography (CT) for a wide readership, from conventional single-slice acquisitions to volume acquisition with multi-slice and cone-beam spiral CT. It covers in detail all characteristic parameters relevant for image quality and all performance features significant for clinical application. Readers will thus be informed how to use a CT system to an optimum depending on the different diagnostic requirements. This includes a detailed discussion about the dose required and about dose measurements as well as how to reduce dose in CT. All considerations pay special attention to spiral CT and to new developments towards advanced multi-slice and cone-beam CT. For the third edition most of the contents have been updated and latest topics like dual source CT, dual energy CT, flat detector CT and interventional CT have been added. The enclosed CD-ROM again offers copies of all figures in the book and attractive case studies, including many examples from the most recent 64-slice acquisitions, and interactive exercises for image viewing and manipulation. This book is intended for all those who work daily, regularly or even only occasionally with CT: physicians, radiographers, engineers, technicians and physicists. A glossary describes all the important technical terms in alphabetical order. The enclosed DVD again offers attractive case studies, including many examples from the most recent 64-slice acquisitions, and interactive exercises for image viewing and manipulation. This book is intended for all those who work daily, regularly or even only occasionally with CT: physicians, radiographers, engineers, technicians and physicists. A glossary describes all the important technical terms in alphabetical order.

Springer Handbook of Medical Technology

This comprehensive publication covers all aspects of image formation in modern

medical imaging modalities, from radiography, fluoroscopy, and computed tomography, to magnetic resonance imaging and ultrasound. It addresses the techniques and instrumentation used in the rapidly changing field of medical imaging. Now in its fourth edition, this text provides the reader with the tools necessary to be comfortable with the physical principles, equipment, and procedures used in diagnostic imaging, as well as appreciate the capabilities and limitations of the technologies.

Review of Radiologic Physics

From basic physics principles to the actual process of producing diagnostic-quality x-rays, *Essentials of Radiographic Physics and Imaging* effectively guides you through the physics and imaging information you need to excel on your ARRT exam and as a professional radiographer. The text's clear language and logical organization help you easily master physics principles as they apply to imaging, plus radiation production and characteristics, imaging equipment, film screen image acquisition and processing, digital image acquisition and display, basics of computed tomography, image analysis, and more. Theory to Practice discussions help you link these principles to real-world applications and practice. An emphasis on practical information provides just what you need to know to pass the ARRT exam and to be a competent practitioner. Integrated coverage of digital radiography describes how to acquire, process, and display digital images, and explains the advantages and limitations of digital vs. conventional imaging processes. Theory to Practice succinctly explains the application of the concept being discussed and helps you understand how to use the information in clinical practice. Make the Connection links physics and imaging concepts to help you fully appreciate the importance of both subjects. Math applications demonstrate how mathematical concepts and formulas are applied in the clinical setting. Critical Concepts further explain and emphasize key points in the chapters. Learning features highlight important information with an outline, key terms, and objectives at the beginning of each chapter and a chapter summary at the end. A glossary of key terms provides a handy reference.

Farr's Physics for Medical Imaging

This completely updated and revised new edition of *Radiation Therapy Physics* contains comprehensive, balanced coverage of the fundamental radiation physics principles and its clinical applications. Since publication of the ground-breaking first edition in the 1970s, high-energy x-ray and electron beams have increasingly become the preferred approach to the radiation treatment of many cancers. Obviously, too, the use of computers has become pervasive in radiation therapy. Imaging techniques and computers are now used routinely in treatment planning, and sophisticated methods are available for overlaying anatomical images with computer generated multidimensional treatment plans. Treatment procedures such as conformal and intensity-modulated radiation therapy, high dose-rate brachytherapy, and image-guided and image-guided and adaptive radiation therapy have become standard operating procedures in radiation therapy clinics around the world. Calibration protocols have been extensively revised, and quality assurance in radiation therapy has become a subject in itself. These procedures, and others that represent state-of-the-art radiation therapy including quality

engineering, are discussed at length in this new edition. The 4th edition has an increased number of chapters (20 compared to 16) and includes new topics of interest to the practicing radiation oncologist and medical physicist:- The chapter on diagnostic imaging has been expanded to include molecular imaging.- A new chapter has been added on proton radiotherapy.- A new chapter has been added on radiation oncology informatics.- A new chapter has been added on quality and safety engineering. - A new chapter on dynamic delivery techniques, explaining the standard (e.g., IMRT) and new treatment techniques (e.g., VMAT). - The treatment planning and brachytherapy chapters omit a detailed explanation of historical techniques that no one uses clinically any longer, in favor of including a new focus on modern computer-based techniques in wide-spread clinical use. - The Problem sections in each chapter have been expanded to include designated ?easy? question designed to give a broad understanding of a topic, and ?hard? questions that would be designed to help the student understand the details of a topic.

Khan's The Physics of Radiation Therapy

Linear Accelerators for Radiation Therapy, Second Edition focuses on the fundamentals of accelerator systems, explaining the underlying physics and the different features of these systems. This edition includes expanded sections on the treatment head, on x-ray production via multileaf and dynamic collimation for the production of wedged and other i

Hendee's Radiation Therapy Physics

This renowned work is derived from the authors' acclaimed national review course ("Physics of Medical Imaging") at the University of California-Davis for radiology residents. The text is a guide to the fundamental principles of medical imaging physics, radiation protection and radiation biology, with complex topics presented in the clear and concise manner and style for which these authors are known. Coverage includes the production, characteristics and interactions of ionizing radiation used in medical imaging and the imaging modalities in which they are used, including radiography, mammography, fluoroscopy, computed tomography and nuclear medicine. Special attention is paid to optimizing patient dose in each of these modalities. Sections of the book address topics common to all forms of diagnostic imaging, including image quality and medical informatics as well as the non-ionizing medical imaging modalities of MRI and ultrasound. The basic science important to nuclear imaging, including the nature and production of radioactivity, internal dosimetry and radiation detection and measurement, are presented clearly and concisely. Current concepts in the fields of radiation biology and radiation protection relevant to medical imaging, and a number of helpful appendices complete this comprehensive textbook. The text is enhanced by numerous full color charts, tables, images and superb illustrations that reinforce central concepts. The book is ideal for medical imaging professionals, and teachers and students in medical physics and biomedical engineering. Radiology residents will find this text especially useful in bolstering their understanding of imaging physics and related topics prior to board exams.

Teaching Atlas of Abdominal Imaging

Basic Clinical Radiobiology is a concise but comprehensive textbook setting out the essentials of the science and clinical application of radiobiology for those seeking accreditation in radiation oncology, clinical radiation physics, and radiation technology. Fully revised and updated to keep abreast of current developments in radiation biology and radiation oncology, this fifth edition continues to present in an interesting way the biological basis of radiation therapy, discussing the basic principles and significant developments that underlie the latest attempts to improve the radiotherapeutic management of cancer. This new edition is highly illustrated with attractive 2-colour presentation and now includes new chapters on stem cells, tissue response and the convergence of radiotherapy, radiobiology, and physics. It will be invaluable for FRCR (clinical oncology) and equivalent candidates, SpRs (and equivalent) in radiation oncology, practicing radiation oncologists and radiotherapists, as well as radiobiologists and radiotherapy physicists.

The Essential Physics of Medical Imaging

This third edition provides a concise and generously illustrated survey of the complete field of medical imaging and image computing, explaining the mathematical and physical principles and giving the reader a clear understanding of how images are obtained and interpreted. Medical imaging and image computing are rapidly evolving fields, and this edition has been updated with the latest developments in the field, as well as new images and animations. An introductory chapter on digital image processing is followed by chapters on the imaging modalities: radiography, CT, MRI, nuclear medicine and ultrasound. Each chapter covers the basic physics and interaction with tissue, the image reconstruction process, image quality aspects, modern equipment, clinical applications, and biological effects and safety issues. Subsequent chapters review image computing and visualization for diagnosis and treatment. Engineers, physicists and clinicians at all levels will find this new edition an invaluable aid in understanding the principles of imaging and their clinical applications.

Essential Radiology Review

This book summarizes basic knowledge of atomic, nuclear, and radiation physics that professionals need for efficient and safe use of ionizing radiation. Concentrating on the underlying principles of radiation physics, it covers prerequisite knowledge for medical physics courses on the graduate and post-graduate levels, providing the link between elementary physics on the one hand and the intricacies of the medical physics specialties on the other.

Medical Imaging Physics

Thoracic Imaging, Second Edition, written by two of the world's most respected specialists in thoracic imaging, is the most comprehensive text-reference to address imaging of the heart and lungs. Inside you'll discover the expert guidance required for the accurate radiologic assessment and diagnosis of both congenital and acquired cardiovascular and pulmonary diseases. New topics in this edition include coronary artery CT, myocardial disease, pericardial disease, and CT of

ischemic heart disease. This edition has a new full-color design and many full-color images, including PET-CT. A companion website will offer fully searchable text and images.

The Physics and Technology of Diagnostic Ultrasound: A Practitioner's Guide (Second Edition)

Diagnostic MRI in Dogs and Cats makes the vast and increasingly complex topic of clinical MRI in small animals accessible to all veterinarians. With the increasing availability of MRI technology, there is also a pressing need for expertise in interpreting these images. This is the first reference textbook to provide a well-illustrated and comprehensive overview of the current knowledge, focusing on imaging appearance rather than on clinical signs or treatment. With chapters on MRI physics and technology as well as sections on specific anatomical regions, the book functions as a stand-alone reference for the reader, whether they be a radiology/neurology resident in training or a practitioner with a need to learn about veterinary clinical MRI. Includes both evidenced-based material and the authors' personal experience, providing an excellent overview of current knowledge in the field. Contributors are international leaders in the field. Bullet points format and table summaries throughout the book keep the concepts concise and organized. Richly illustrated with over 650 annotated images showcasing the main features of the disease processes. Images are obtained at all magnet field strengths, so as to reflect the current reality of veterinary MRI, which uses low-, mid- and high-field magnets. The chapters on physics and MRI technology are concise and accessible, using many visual aids and diagrams, and avoiding abstract concepts and equations whenever possible. Within each anatomical section, each chapter focuses on a disease category of that body region. When it is important to understand the imaging appearance, the pathophysiology is reviewed and imaging features of prognostic relevance are detailed. This practical yet thoroughly comprehensive book is primarily an evidence-based learning resource for trainees, but will also aid practising veterinarians who have less MRI experience.

FRCR Physics MCQs in Clinical Radiology

Teaching Atlas of Abdominal Imaging is a case-based reference covering the full spectrum of common and uncommon problems of the gastrointestinal and genitourinary tract encountered in everyday practice. The book organizes cases into sections based on the anatomic location of the problem. Each chapter provides succinct descriptions of clinical presentation, radiologic findings, diagnosis, and differential diagnosis for the case. The chapter then discusses the background for each diagnosis, clinical findings, common complications, etiology, imaging findings, treatment, and prognosis. Key features: Succinct text and consistent presentation in each chapter enhance the ease of use Practical discussion of all current imaging modalities Nearly 550 high-quality images demonstrate key concepts Bulleted lists of pearls and pitfalls at the end of each chapter highlight important points An appendix with 64-slice protocols for various CT scans, such as dual-phase liver and pancreatic scans Ideal for both self-assessment and rapid review, this book is a valuable resource for radiologists, gastrointestinal and genitourinary radiologists, and fellows and residents in these

specialties.

Essentials of Radiographic Physics and Imaging - E-Book

Dr. Khan's classic textbook on radiation oncology physics is now in its thoroughly revised and updated Fourth Edition. It provides the entire radiation therapy team—radiation oncologists, medical physicists, dosimetrists, and radiation therapists—with a thorough understanding of the physics and practical clinical applications of advanced radiation therapy technologies, including 3D-CRT, stereotactic radiotherapy, HDR, IMRT, IGRT, and proton beam therapy. These technologies are discussed along with the physical concepts underlying treatment planning, treatment delivery, and dosimetry. This Fourth Edition includes brand-new chapters on image-guided radiation therapy (IGRT) and proton beam therapy. Other chapters have been revised to incorporate the most recent developments in the field. This edition also features more than 100 full-color illustrations throughout. A companion Website will offer the fully searchable text and an image bank.

MDCT Physics: The Basics

In print since 1972, this seventh edition of Radiobiology for the Radiologist is the most extensively revised to date. It consists of two sections, one for those studying or practicing diagnostic radiology, nuclear medicine and radiation oncology; the other for those engaged in the study or clinical practice of radiation oncology--a new chapter, on radiologic terrorism, is specifically for those in the radiation sciences who would manage exposed individuals in the event of a terrorist event. The 17 chapters in Section I represent a general introduction to radiation biology and a complete, self-contained course especially for residents in diagnostic radiology and nuclear medicine that follows the Syllabus in Radiation Biology of the RSNA. The 11 chapters in Section II address more in-depth topics in radiation oncology, such as cancer biology, retreatment after radiotherapy, chemotherapeutic agents and hyperthermia. Now in full color, this lavishly illustrated new edition is replete with tables and figures that underscore essential concepts. Each chapter concludes with a "summary of pertinent conclusions" to facilitate quick review and help readers retain important information.

Thoracic Imaging

An integrated, comprehensive survey of biomedical imaging modalities An important component of the recent expansion in bioengineering is the area of biomedical imaging. This book provides in-depth coverage of the field of biomedical imaging, with particular attention to an engineering viewpoint. Suitable as both a professional reference and as a text for a one-semester course for biomedical engineers or medical technology students, Introduction to Biomedical Imaging covers the fundamentals and applications of four primary medical imaging techniques: magnetic resonance imaging, ultrasound, nuclear medicine, and X-ray/computed tomography. Taking an accessible approach that includes any necessary mathematics and transform methods, this book provides rigorous discussions of: The physical principles, instrumental design, data acquisition

strategies, image reconstruction techniques, and clinical applications of each modality. Recent developments such as multi-slice spiral computed tomography, harmonic and sub-harmonic ultrasonic imaging, multi-slice PET scanning, and functional magnetic resonance imaging. General image characteristics such as spatial resolution and signal-to-noise, common to all of the imaging modalities.

Musculoskeletal Ultrasound

An up-to-date edition of the authoritative text on the physics of medical imaging, written in an accessible format. The extensively revised fifth edition of Hendee's *Medical Imaging Physics*, offers a guide to the principles, technologies, and procedures of medical imaging. Comprehensive in scope, the text contains coverage of all aspects of image formation in modern medical imaging modalities including radiography, fluoroscopy, computed tomography, nuclear imaging, magnetic resonance imaging, and ultrasound. Since the publication of the fourth edition, there have been major advances in the techniques and instrumentation used in the ever-changing field of medical imaging. The fifth edition offers a comprehensive reflection of these advances including digital projection imaging techniques, nuclear imaging technologies, new CT and MR imaging methods, and ultrasound applications. The new edition also takes a radical strategy in organization of the content, offering the fundamentals common to most imaging methods in Part I of the book, and application of those fundamentals in specific imaging modalities in Part II. These fundamentals also include notable updates and new content including radiobiology, anatomy and physiology relevant to medical imaging, imaging science, image processing, image display, and information technologies. The book makes an attempt to make complex content in accessible format with limited mathematical formulation. The book is aimed to be accessible by most professionals with lay readers interested in the subject. The book is also designed to be of utility for imaging physicians and residents, medical physics students, and medical physicists and radiologic technologists preparing for certification examinations. The revised fifth edition of Hendee's *Medical Imaging Physics* continues to offer the essential information and insights needed to understand the principles, the technologies, and procedures used in medical imaging.

Musculoskeletal Imaging: A Core Review

This concise, user-oriented and up-to-date desk reference offers a broad introduction to the fascinating world of medical technology, fully considering today's progress and further development in all relevant fields. The *Springer Handbook of Medical Technology* is a systemized and well-structured guideline which distinguishes itself through simplification and condensation of complex facts. This book is an indispensable resource for professionals working directly or indirectly with medical systems and appliances every day. It is also meant for graduate and post graduate students in hospital management, medical engineering, and medical physics.

Christensen's Physics of Diagnostic Radiology

Now revised to reflect the new, clinically-focused certification exams, *Review of Radiological Physics, Fourth Edition*, offers a complete review for radiology residents and radiologic technologists preparing for certification. . This new edition covers x-ray production and interactions, projection and tomographic imaging, image quality, radiobiology, radiation protection, nuclear medicine, ultrasound, and magnetic resonance – all of the important physics information you need to understand the factors that improve or degrade image quality. Each chapter is followed by 20 questions for immediate self-assessment, and two end-of-book practice exams, each with 100 additional questions, offer a comprehensive review of the full range of topics.

Basic Clinical Radiobiology

Organised along an organ and systems basis, this comprehensive reference source covers all diagnostic and interventional imaging techniques and modalities in an integrated, correlative fashion.

Felson's Principles of Chest Roentgenology E-Book

Covers the most important imaging modalities in radiology: projection radiography, x-ray computed tomography, nuclear medicine, ultrasound imaging, and magnetic resonance imaging. Organized into parts to emphasize key overall conceptual divisions.

Brachytherapy

This book offers a collection of specimen multiple choice questions (MCQs) for the first FRCR examination in clinical radiology that is for the physics module. It includes questions arranged in nine sets of 40 MCQs following the examination format. Additionally, chapters cover explanation to some of the answers for better understanding of the topics. The book covers updated syllabus of Royal College of Radiology (RCR), UK on scientific basis of medical imaging, including topics in molecular imaging. Each chapter with a practice set comprises of questions arranged in the order of the syllabus of the examination, starting from the basis of medical imaging and radiation physics to the principles of specific modalities and safety issues. This book offers assistance to candidates preparing for the first FRCR examination, clinical radiology trainees, and radiology and nuclear medicine postgraduate students.

Medical Imaging Signals and Systems

Physics in Nuclear Medicine - by Drs. Simon R. Cherry, James A. Sorenson, and Michael E. Phelps - provides current, comprehensive guidance on the physics underlying modern nuclear medicine and imaging using radioactively labeled tracers. This revised and updated fourth edition features a new full-color layout, as well as the latest information on instrumentation and technology. Stay current on crucial developments in hybrid imaging (PET/CT and SPECT/CT), and small animal imaging, and benefit from the new section on tracer kinetic modeling in neuroreceptor imaging. What's more, you can reinforce your understanding with

graphical animations online at www.expertconsult.com, along with the fully searchable text and calculation tools. Master the physics of nuclear medicine with thorough explanations of analytic equations and illustrative graphs to make them accessible. Discover the technologies used in state-of-the-art nuclear medicine imaging systems Fully grasp the process of emission computed tomography with advanced mathematical concepts presented in the appendices. Utilize the extensive data in the day-to-day practice of nuclear medicine practice and research. Tap into the expertise of Dr. Simon Cherry, who contributes his cutting-edge knowledge in nuclear medicine instrumentation. Stay current on the latest developments in nuclear medicine technology and methods New sections to learn about hybrid imaging (PET/CT and SPECT/CT) and small animal imaging. View graphical animations online at www.expertconsult.com, where you can also access the fully searchable text and calculation tools. Get a better view of images and line art and find information more easily thanks to a brand-new, full-color layout. The perfect reference or textbook to comprehensively review physics principles in nuclear medicine.

Fundamentals of Medical Imaging

Supplemented with tables and illustrations throughout, each chapter provides readers with well-delineated descriptions of the different aspects of physics and radiation biology related to nuclear medicine. The last edition was successful and highly acclaimed, as Dr. Saha made many complex concepts readily understandable for residents, students and practitioners in nuclear medicine. This second edition serves as an excellent text for nuclear medicine residents and technology students to prepare for their Board and Registry examinations. Special features include: Statistical tests: The Chi-Square test, the student t-test and linear regression; Internal dosimetry based on uptake variation; Digital computers: Data acquisition, filters, data processing; Coincidence detector gamma camera; Expanded chapter on radiation biology; Criteria for patient release and breast feeding; DOT regulations.

Computed Tomography

This book is the outcome of a fruitful, long-standing cooperation between expert radiologists and clinicians, and explains the most relevant features and technical requirements that are needed to optimally conduct and assess MR examinations for temporomandibular joint (TMJ) pathologies. TMJ conditions are increasingly gaining attention, as the underlying diseases involved can vary considerably and be difficult to diagnose. Similarly, several imaging sub-specialties (e.g. dental radiology, neuroradiology, and musculoskeletal radiology) now find themselves dealing with the temporomandibular joints. The authors provide essential information on TMJ anatomy, dynamics, function and dysfunction. Correlations between clinical aspects and MRI findings are discussed and guidance for the correct interpretation of results is offered. Special findings that are helpful for differential diagnosis (arthritis, osteochondroma, synovial chondromatosis) are also examined. Given its extensive and varied coverage, the book offers a valuable asset for radiologists, dentists, gnathologists, maxillofacial surgeons, orthodontists and other professionals seeking a thorough overview of the subject

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