Physics B 2014 Scoring Guidelines

"In crystalline text steeped in cold rage, Sayer takes aim at the REF's central claim, that it is a legitimate process of expert peer review. He critiques university and national-level REF processes against actual practices of scholarly review as found in academic journals, university presses, and North American tenure procedures. His analysis is damning. If the REF fails as scholarly review, how can academics and universities continue to participate? And how can government use its rankings as a basis for public policy?" - Tarak Barkawi, London School of Economics "Sayer makes a compelling argument that the Research Excellence Framework is not only expensive and divisive, but is also deeply flawed as an evaluation exercise. Rank Hypocrisies is a rigorous and scholarly evaluation of the REF, yet written in a lively and engaging style that makes it highly readable." - Dorothy Bishop, University of Oxford Few decisions are as consequential for the funding and reputation of Britain's universities as those of REF panels. Not only do REF rankings determine the levels of research funding universities receive from the state. They equally affect institutions' ability to attract external grants, top-flight faculty, and graduate students. Whatever benefit the UK's periodic research assessment exercises may have brought to research productivity, the REF has been widely criticized for its enormous costs in taxpayers' money and academics' time, its discouragement of innovative (and especially interdisciplinary) research, and its negative effects on collegiality and staff morale. Derek Sayer extends these arguments, notably through his discussion of the questionable staff selection processes used in REF2014 within his own university. Where Rank Hypocrisies goes beyond previous critiques is in its open challenge to the REF's claim to

provide 'expert review of the outputs' - the very heart of its legitimacy. Examining the composition and operation of REF disciplinary subpanels in forensic detail, Sayer paints a picture in which overburdened assessors assign vaguely defined grades in fields that are frequently not their own while ignoring all external indicators of the academic influence of the publications they are appraising, and then shred all records of their deliberations. Judged against international norms of peer review, the REF is an elaborate charade - and an insult to the core values of the academy.

Practical Guide for Biomedical Signals Analysis Using Machine Learning Techniques: A MATLAB Based Approach presents how machine learning and biomedical signal processing methods can be used in biomedical signal analysis. Different machine learning applications in biomedical signal analysis, including those for electrocardiogram, electroencephalogram and electromyogram are described in a practical and comprehensive way, helping readers with limited knowledge. Sections cover biomedical signals and machine learning techniques, biomedical signals, such as electroencephalogram (EEG), electromyogram (EMG) and electrocardiogram (ECG), different signal-processing techniques, signal de-noising, feature extraction and dimension reduction techniques, such as PCA, ICA, KPCA, MSPCA, entropy measures, and other statistical measures, and more. This book is a valuable source for bioinformaticians, medical doctors and other members of the biomedical field who need a cogent resource on the most recent and promising machine learning techniques for biomedical signals analysis. Provides comprehensive knowledge in the application of machine learning tools in biomedical signal analysis for medical diagnostics, brain computer interface and man/machine interaction Explains how to apply machine learning techniques to EEG, ECG and

EMG signals Gives basic knowledge on predictive modeling in biomedical time series and advanced knowledge in machine learning for biomedical time series

Presents a study plan to build knowledge and confidence, discusses study skills and strategies, offers a review of the core concepts, and includes one diagnostic exam and two practice exams.

Get ready for your AP Physics 2 exam with this straightforward, easy-to-follow study guide AP Physics 1 and AP Physics 2 together replaced the course formerly titled AP Physics B. The new courses debuted in 2014, with the first Physics 1 and Physics 2 exams given in 2015. The wildly popular test prep guide? updated and enhanced for smartphone users?5 Steps to a 5: AP Physics 2 2017 provides a proven strategy to achieving high scores on this demanding Advanced Placement exam. This logical and easy-to-follow instructional guide introduces an effective 5-step study plan to help students build the skills, knowledge, and test-taking confidence they need to reach their full potential. The book helps students master both multiple-choice and free-response questions and offers comprehensive answer explanations and sample responses. Written by a physics teacher and an AP consultant, this insider's guide reflects the latest course syllabus and includes 2 full-length practice exams, plus the most up-to-date scoring information. The 5 Steps to a 5: AP Physics 2 2017 effective 5-step plan breaks down test preparation into stages: 1. Set Up Your Study Program 2. Determine Your Test Readiness 3. Develop Strategies for Success 4. Develop the Knowledge You Need to Score High 5. Build Your Test-Taking Confidence. 2 full-length practice exams BONUS interactive AP Planner app delivers a customized study schedule and extra practice questions to students' mobile devices The 5 Steps to a 5 series has prepared millions of students for success

Alan Turing has long proved a subject of fascination, but following the centenary of his birth in 2012, the code-breaker, computer pioneer, mathematician (and much more) has become even more celebrated with much media coverage, and several meetings, conferences and books raising public awareness of Turing's life and work. This volume will bring together contributions from some of the leading experts on Alan Turing to create a comprehensive guide to Turing that will serve as a useful resource for researchers in the area as well as the increasingly interested general reader. The book will cover aspects of Turing's life and the wide range of his intellectual activities, including mathematics, code-breaking, computer science, logic, artificial intelligence and mathematical biology, as well as his subsequent influence. Even as simple a task as quenching thirst with a glass of water involves a sequence of perceptions and actions woven together by expectations and experience. What are the myriad links between perception and action, and what does cognition have to do with them? Intuitively we think that perception precedes action, but we also know that action moulds perception. The reciprocal links between perception and action are now accepted almost universally. The discovery of mirror neurons that encode observed actions has further emphasized the coupling of perception and action. The real aim of this research topic is to go beyond identifying the evidence for perception-action coupling, and study the cognitive entities and processes that influence the perception-action link. For example, the internal representations of perceived and produced events are created and modified through experience. Yet the perception action link is considered relatively automatic. To what extent is the perception-action link affected by representations and their manipulations by cognitive processes? Does selective attention modify the perception action coupling? How, and to what extent, does the context provide

sources of cognitive control? The developmental trajectory of the perception-action link and the influence of cognition at various stages of development could be another line of important evidence. The responses to these and other such questions contribute to our understanding of this research area with significant implications for perception-action coupling.

THE PRINCETON REVIEW GETS RESULTS. Get all the prep you need to ace the AP Physics B Exam with 2 full-length practice tests, thorough topic reviews, and proven techniques to help you score higher. This eBook edition has been optimized for digital viewing with cross-linked questions, answers, and explanations. Inside the Book: All the Practice & Strategies You Need • 2 full-length practice tests with detailed explanations • Expert subject reviews for all test topics • Practice drills at the end of each content review chapter • Step-by-step strategies & techniques for every section of the exam • Practical information about what to expect on the AP Physics B exam

Following recent developments in hypofractionated stereotactic radiation therapy (SRT) for brain and spine tumors, this new edition offers a fully updated and comprehensive "how-to" guidance on hypofractionated SRT for brain and spine metastases, glioma, benign tumors, and other tumor types. Presenting the state of the art of the technology and practice, this book: • Discusses the pros and cons of hypofractionated SRT compared to single-fraction radiosurgery, providing a deeper understanding of radiosurgery and radiobiology • Explains the toxicity and adverse effects of hypofractionated SRT including the dosage of 24 Gy in two spine SBRT fractionation schemes, aiding practitioners in communicating the risks and benefits of treatment and in obtaining consent from their patients • Outlines the current standards for safe practice, including checklists for implementation • Explores new

technologies for brain and spine tumors including LITT, MR-guided focused ultrasound, and Zap technology, with chapters authored by well-recognized experts in the radiation, oncology, and neurosurgery communities; this book delivers a level of technological and clinical detail not available in journal papers This book is suitable for radiation oncologists, neurosurgeons, and medical physicists who specialize in brain and/or spine radiosurgery or want to start a program and need a comprehensive reference with key checklists for practice.

The role of technology in the medical field has resulted in significant developments within the pharmaceutical industry. Computational approaches have emerged as a crucial method in further advancing drug design and development. Methods and Algorithms for Molecular Docking-Based Drug Design and Discovery presents emerging research on the application of computer-assisted design methods for drugs, emphasizing the benefits and improvements that molecular docking has caused within the pharmaceutical industry. Focusing on validation methods, search algorithms, and scoring functions, this book is a pivotal resource for professionals, researchers, students, and practitioners in the field of theoretical and computational chemistry.

This book presents a general and comprehensive framework for the assurance of quality in measurements. Written by a foremost expert in the field, the text reflects an on-going international effort to extend traditional quality assured measurement, rooted in fundamental physics and the SI, to include non-physical areas such as person-centred care and the social sciences more generally. Chapter by chapter, the book follows the measurement quality assurance loop, based on Deming's work. The author enhances this quality assurance cycle with insights from recent research, including work on the politics and philosophy of metrology,

the new SI, quantitative and qualitative scales and entropy, decision risks and uncertainty when addressing human challenges, Man as a Measurement Instrument, and Psychometry and Person-centred care. Quality Assured Measurement: Unification across Social and Physical Sciences provides students and researchers in physics, chemistry, engineering, medicine and the social sciences with practical guidance on designing, implementing and applying a quality-assured measurement while engaging readers in the most novel and expansive areas of contemporary measurement research.

Computational Approaches for Studying Enzyme Mechanism Part A, is the first of two volumes in the Methods in Enzymology series, focusses on computational approaches for studying enzyme mechanism. The serial achieves the critically acclaimed gold standard of laboratory practices and remains one of the most highly respected publications in the molecular biosciences. Each volume is eagerly awaited, frequently consulted, and praised by researchers and reviewers alike. Now with over 550 volumes, the series remains a prominent and essential publication for researchers in all fields of life sciences and biotechnology, including biochemistry, chemical biology, microbiology, synthetic biology, cancer research, and genetics to name a few. Focuses on computational approaches for studying enzyme mechanism Continues the legacy of this premier serial with quality chapters authored by leaders in the field Covers research methods in intermediate filament associated proteins, and contains sections on such topics as lamin-associated proteins, intermediate filament-associated proteins and plakin, and other cytoskeletal cross-linkers

Written specifically for non-sleep medicine specialists, this one-of-a-kind reference guides you through every aspect of this complex field with authoritative advice from Dr. Meir Kryger and

other experts. Vibrantly illustrated in full color, it thoroughly covers the types of patients you're most likely to see in the outpatient setting and brings you up to date with the latest treatment methods, both surgical and non-surgical. Consult this title on your favorite e-reader, conduct rapid searches, and adjust font sizes for optimal readability. Complete coverage of the patients you're most likely to encounter, including special populations such as those with COPD, obesity hypoventilation, pregnancy, neuromuscular disorders, stroke, and more. Specific information on topics of interest to a wide variety of physicians: heart failure and sleep disordered breathing; surgical treatments, including hypoglossal nerve stimulation; oral appliances and the treatment of sleep apnea; home sleep testing; and different types of PAP devices. Ideal for pulmonologists, otolaryngologists, cardiologists, primary care physicians, dentists, and other healthcare providers who encounter patients with sleep and breathing disorders. Full-color illustrations throughout, including a profusely illustrated chapter on physical diagnosis.

Get ready for your AP Physics 1 exam with this straightforward, easy-to-follow study guide AP Physics 1 and AP Physics 2 together replaced the course formerly titled AP Physics B. The new courses debuted in 2014, with the first Physics 1 and Physics 2 exams given in 2015. The wildly popular test prep guide— updated and enhanced for smartphone users—5 Steps to a 5: AP Physics 1 2017 provides a proven strategy to achieving high scores on this demanding Advanced Placement exam. This logical and easy-to-follow instructional guide introduces an effective 5-step study plan to help students build the skills, knowledge, and test-taking confidence they need to reach their full potential. The book helps students master both multiple-choice and free-response questions and offers comprehensive answer explanations and

sample responses. Written by a physics teacher, this insider's guide reflects the latest course syllabus and includes 2 full-length practice exams, plus the most up-to-date scoring information. The 5 Steps to a 5: AP Physics 1 2017 effective 5-step plan breaks down test preparation into stages: 1. Set Up Your Study Program 2. Determine Your Test Readiness 3. Develop Strategies for Success 4. Develop the Knowledge You Need to Score High 5. Build Your Test-Taking Confidence. 2 full-length practice exams · BONUS interactive AP Planner app delivers a customized study schedule and extra practice questions to students' mobile devices · The 5 Steps to a 5 series has prepared millions of students for success Greg Jacobs teaches AP Physics at Woodberry Forest School in central Virginia.

The delivery of optimal pharmaceutical services to patients is a pivotal concern in the healthcare field. By examining current trends and techniques in the industry, processes can be maintained and improved. Pharmaceutical Sciences: Breakthroughs in Research and Practice provides comprehensive coverage of the latest innovations and advancements for pharmaceutical applications. Focusing on emerging drug development techniques and drug delivery for improved health outcomes, this book is ideally designed for medical professionals, pharmacists, researchers, academics, and upper-level students within the growing pharmaceutical industry.

The Advanced Placement test preparation guide that delivers 75 years of proven Kaplan experience and features exclusive strategies, practice, and review to help students ace the AP Physics B & C exam! Students spend the school year preparing for the AP Physics B & C test. Now it's time to reap the rewards: money-saving college credit, advanced placement, or an admissions edge. However, achieving a top score on the AP Physics B & C exam requires

more than knowing the material students need to get comfortable with the test format itself, prepare for pitfalls, and arm themselves with foolproof strategies. That's where the Kaplan plan has the clear advantage. Kaplan AP Physics B & C 2013 - 2014 contains many essential and unique features to help improve test scores, including: 2 full-length practice tests and a diagnostic test to target areas for score improvement Detailed answer explanations Tips and strategies for scoring higher from expert AP teachers and students who got a perfect 5 on the exam Kaplan AP Physics B & C 2013 - 2014 provides students with everything they need to improve their scores guaranteed. Kaplan's Higher Score guarantee provides security that no other test preparation guide on the market can match. Kaplan has helped more than three million students to prepare for standardized tests. We invest more than $4.5 million annually in research and support for our products. We know that our test-taking techniques and strategies work and our materials are completely up-to-date. Kaplan AP Physics B & C 2013 - 2014 is the must-have preparation tool for every student looking to do better on the AP Physics B & C test! This book contains papers presented at the International Conference on Science Education 2012, ICSE 2012, held in Nanjing University, Nanjing, China. It features the work of science education researchers from around the world addressing a common theme, Science Education: Policies and Social Responsibilities.The book covers a range of topics including international science education standards, public science education and science teacher education. It also examines how STEM education has dominated some countries' science education policy, ways brain research might provide new approaches for assessment, how some countries are developing their new national science education standards with research-based evidence and ways science teacher educators can learn from each other.Science

education research is vital in the development of national science education policies, including science education standards, teacher professional development and public understanding of science. Featuring the work of an international group of science education researchers, this book offers many insightful ideas, experiences and strategies that will help readers better understand and address challenges in the field.

This unique volume introduces and discusses the methods of validating computer simulations in scientific research. The core concepts, strategies, and techniques of validation are explained by an international team of pre-eminent authorities, drawing on expertise from various fields ranging from engineering and the physical sciences to the social sciences and history. The work also offers new and original philosophical perspectives on the validation of simulations. Topics and features: introduces the fundamental concepts and principles related to the validation of computer simulations, and examines philosophical frameworks for thinking about validation; provides an overview of the various strategies and techniques available for validating simulations, as well as the preparatory steps that have to be taken prior to validation; describes commonly used reference points and mathematical frameworks applicable to simulation validation; reviews the legal prescriptions, and the administrative and procedural activities related to simulation validation; presents examples of best practice that demonstrate how

methods of validation are applied in various disciplines and with different types of simulation models; covers important practical challenges faced by simulation scientists when applying validation methods and techniques; offers a selection of general philosophical reflections that explore the significance of validation from a broader perspective. This truly interdisciplinary handbook will appeal to a broad audience, from professional scientists spanning all natural and social sciences, to young scholars new to research with computer simulations. Philosophers of science, and methodologists seeking to increase their understanding of simulation validation, will also find much to benefit from in the text.

The Advanced Placement test preparation guide that delivers 75 years of proven Kaplan experience and features exclusive strategies, practice, and review to help students ace the AP Physics B & C exam! Students spend the school year preparing for the AP Physics B & C test. Now it's time to reap the rewards: money-saving college credit, advanced placement, or an admissions edge. However, achieving a top score on the AP Physics B & C exam requires more than knowing the material students need to get comfortable with the test format itself, prepare for pitfalls, and arm themselves with foolproof strategies. That's where the Kaplan plan has the clear advantage. Kaplan AP Physics B & C 2014 contains many essential and unique features to help improve test scores,

including: 2 full-length practice tests and a diagnostic test to target areas for score improvement Detailed answer explanations Tips and strategies for scoring higher from expert AP teachers and students who got a perfect 5 on the exam Kaplan AP Physics B & C 2014 provides students with everything they need to improve their scores guaranteed. Kaplan's Higher Score guarantee provides security that no other test preparation guide on the market can match. Kaplan has helped more than three million students to prepare for standardized tests. We invest more than $4.5 million annually in research and support for our products. We know that our test-taking techniques and strategies work and our materials are completely up-to-date. Kaplan AP Physics B & C 2014 is the must-have preparation tool for every student looking to do better on the AP Physics B & C test!

Dit boek geeft een breed overzicht van toets- en beoordelingsvormen in het hoger onderwijs. Ook beschrijft het verschillende aspecten van toetsen en het toetsproces. Het boek geeft handreikingen en praktijkvoorbeelden. Daarmee is het een praktische en inspirerende informatiebron voor opleidingen, examencommissies, toetscommissies en (aankomende) docenten. In deze vierde druk staan nieuwe hoofdstukken over onder meer de kwaliteitspiramide, het samenwerken bij toetsontwikkeling, het toetsen van creativiteit en over de

rechtsbescherming van examinandi. De hoofdstukken over digitaal toetsen en ervaringscertificaten (EVC) zijn herschreven. Bijvoorbeeld met extra informatie over flexibel onderwijs. In ieder hoofdstuk is veel aandacht voor de rol van de docent. Toetsen in het hoger onderwijs kan gebruikt worden om een goed toetsbeleid op te zetten en uit te voeren. Daarmee is het geschikt om het certificaat Basiskwalificatie Examinering (BKE) en het Seniorkwalificatie Examinering (SKE) te behalen. Het boek is toegankelijk en daarom ook goed bruikbaar voor toetsconstructie in het voortgezet onderwijs en middelbaar beroepsonderwijs.

This book offers a comprehensive review of the state of the art in Ultrasonography (USG) dentomaxillofacial imaging to help radiologists and dentists in their training and daily practice. The book examines the relationship between clinical features, diagnosis, and choice of minimally invasive technique for a range of dentomaxillofacial disorders and provides information on post-treatment therapy. Accurate interpretation of indications for treatment is the cornerstone of success in medicine, and as such, the book explains how the selection of imaging technique is closely linked to clinical and diagnostic aspects and how recognition of this relationship forms the foundation for optimal outcomes. In addition to examining the various modalities, the book highlights the

role of the latest USG imaging techniques. Further, it discusses in detail the pathology, treatment, and prognosis of common and rare diseases, as well as congenital/developmental malformations in the dentomaxillofacial, an area that is often underestimated and largely ignored by dentists. Featuring updated high-resolution images created with state-of-the-art equipment, the book introduces readers to current imaging modalities. It also includes pathological descriptions of radiologic diagnoses to help clarify the pathophysiology of the disease, while the pearls and pitfalls of image interpretation provide a quick reference guide for practitioners. Written by leading international experts, this outstanding book is a valuable resource for both radiologists, dentists and students seeking a more in-depth appreciation of the subject and its contribution to the scientific radiology community.

Experimental Econophysics describes the method of controlled human experiments, which is developed by physicists to study some problems in economics or finance, namely, stylized facts, fluctuation phenomena, herd behavior, contrarian behavior, hedge behavior, cooperation, business cycles, partial information, risk management, and stock prediction. Experimental econophysics together with empirical econophysics are two branches of the field of econophysics. The latter one has been extensively discussed in the existing

books, while the former one has been seldom touched. In this book, the author will focus on the branch of experimental econophysics. Empirical econophysics is based on the analysis of data in real markets by using some statistical tools borrowed from traditional statistical physics. Differently, inspired by the role of controlled experiments and system modelling (for computer simulations and/or analytical theory) in developing modern physics, experimental econophysics specially relies on controlled human experiments in the laboratory (producing data for analysis) together with agent-based modelling (for computer simulations and/or analytical theory), with an aim at revealing the general cause-effect relationship between specific parameters and emergent properties of real economic/financial markets. This book covers the basic concepts, experimental methods, modelling approaches, and latest progress in the field of experimental econophysics.

This book, edited by leading experts in radiology, nuclear medicine, and radiation oncology, offers a wide-ranging, state of the art overview of the specifics and the benefits of a multidisciplinary approach to the use of imaging in image-guided radiation treatments for different tumor types. The entire spectrum of the most important cancers treated by radiation are covered, including CNS, head and neck, lung, breast, gastrointestinal, genitourinary, and gynecological tumors. The

opening sections of the book address background issues and a range of important technical aspects. Detailed information is then provided on the use of different imaging techniques for T staging and target volume delineation, response assessment, and follow-up in various parts of the body. The focus of the book ensures that it will be of interest for a multidisciplinary forum of readers comprising radiation oncologists, nuclear medicine physicians, radiologists and other medical professionals.

Cracking the AP Physics B Exam, 2014 EditionPrinceton Review

This theory-to-practice guide offers leading-edge ideas for wide-scale curriculum reform in sciences, technology, engineering, the arts, and mathematics--the STEAM subjects. Chapters emphasize the critical importance of current and emerging digital technologies in bringing STEM education up to speed and implementing changes to curricula at the classroom level. Of particular interest are the diverse ways of integrating the liberal arts into STEM course content in mutually reshaping humanities education and scientific education. This framework and its many instructive examples are geared to ensure that both educators and students can become innovative thinkers and effective problem-solvers in a knowledge-based society. Included in the coverage: Reconceptualizing a college science learning experience in the new digital era.

Using mobile devices to support formal, informal, and semi-formal learning. Change of attitudes, self-concept, and team dynamics in engineering education. The language arts as foundational for science, technology, engineering, art, and mathematics. Can K-12 math teachers train students to make valid logical reasoning? Moving forward with STEAM education research. Emerging Technologies for STEAM Education equips educators, education researchers, administrators, and education policymakers with curricular and pedagogical strategies for making STEAM education the bedrock of accessible, relevant learning in keeping with today's digital advances.

Within the healthcare domain, big data is defined as any ``high volume, high diversity biological, clinical, environmental, and lifestyle information collected from single individuals to large cohorts, in relation to their health and wellness status, at one or several time points.'' Such data is crucial because within it lies vast amounts of invaluable information that could potentially change a patient's life, opening doors to alternate therapies, drugs, and diagnostic tools. Signal Processing and Machine Learning for Biomedical Big Data thus discusses modalities; the numerous ways in which this data is captured via sensors; and various sample rates and dimensionalities. Capturing, analyzing, storing, and visualizing such massive data has required new shifts in signal processing

paradigms and new ways of combining signal processing with machine learning tools. This book covers several of these aspects in two ways: firstly, through theoretical signal processing chapters where tools aimed at big data (be it biomedical or otherwise) are described; and, secondly, through application-driven chapters focusing on existing applications of signal processing and machine learning for big biomedical data. This text aimed at the curious researcher working in the field, as well as undergraduate and graduate students eager to learn how signal processing can help with big data analysis. It is the hope of Drs. Sejdic and Falk that this book will bring together signal processing and machine learning researchers to unlock existing bottlenecks within the healthcare field, thereby improving patient quality-of-life. Provides an overview of recent state-of-the-art signal processing and machine learning algorithms for biomedical big data, including applications in the neuroimaging, cardiac, retinal, genomic, sleep, patient outcome prediction, critical care, and rehabilitation domains. Provides contributed chapters from world leaders in the fields of big data and signal processing, covering topics such as data quality, data compression, statistical and graph signal processing techniques, and deep learning and their applications within the biomedical sphere. This book's material covers how expert domain knowledge can be used to advance signal processing and machine learning for

biomedical big data applications.

Computed tomography (CT) is an increasingly used modality for investigations of patients with suspected coronary artery disease (CAD). Technical advances could improve diagnostic accuracy and lead to clinical workflow improvements. Also, more prognostic information can optimize clinical follow-up strategies and treatments. The general aim of this thesis was to explore the use of CT for CAD investigations. Three studies aimed to examine new technologies, including the evaluation of an on-site, computed tomography-based fractional flow reserve (CT-FFR) software (study I), the evaluation of an AI-based, calcium scoring computed tomography (CSCT) software (study III), and the evaluation of an photon-counting detector (PCD)-CT (study IV). One study aimed to evaluate the long-term prognostic value of coronary computed tomography angiography (CCTA) in symptomatic patients with no history of CAD (study II). The software evaluation studies (study I and III) and the prognostic study (study II) utilized CT data from clinical patients, while the PCD-CT evaluation study (study IV) used CT data from cadaveric specimens. The performances of both software programs were compared with standard references, being represented by fractional flow reserve (FFR) measurements (study I), and coronary artery calcification (CAC) scores from a semi-automatic software (study III), respectively. The PCD-CT

performance on CAC quantification was compared with corresponding results from an energy integrating detector (EID)-CT, using micro-CT as the standard reference (study IV). The prognostic study merged registries to identify major adverse cardiac events (MACE), having a follow-up time of up to 7.5 years (study II). The CT-FFR and CSCT software correlation and agreement to corresponding standard references were good and excellent, respectively. Also, both software programs had time-saving potential (study I and III). The CAC quantification was more accurate using PCD-CT than EID-CT (study IV). The prognosis was excellent in patients with normal coronary arteries, and progressively impaired in non-obstructive and obstructive CAD (study II). The results in this thesis convey developmental, technical CT technology advances for CAD investigations. In addition, prognostic follow-up data is communicated. The results may benefit patients by an increased accuracy in the CT evaluation of CAD and can contribute to improve clinical follow-up strategies. Furthermore, the results suggest possibilities to improve the workflow in clinical radiology, which potentially could impact health care costs. Datortomografi (DT) är en kliniskt använd modalitet för utredning av misstänkt kranskärlsjukdom. För att förbättra framtida diagnostik, klinisk effektivitet och uppföljningsstrategier är det av stor vikt med teknisk vidareutveckling, och att erhålla relevant prognostisk information.

Syftet med denna avhandling var att studera användandet av DT vid misstänkt kranskärlssjukdom. Tre studier syftade till att utvärdera nya tekniker, vilket innefattade utvärderingar av två nya mjukvaror samt en utvärdering av fotonräknar-DT (FR-DT). En studie syftade till att utvärdera det prognostiska värdet av DT kranskärl. Det första delarbetet utvärderade en mjukvara, som använde data från DT kranskärl för att beräkna tryckfall över misstänkta kranskärlsstenoser. Tiden för att erhålla tryckfallsmätningarna registrerades också. Resultaten av tryckfallsmätningarna jämfördes med en standardreferens, vilken utgjordes av invasiva, kateterburna tryckfallsregistreringar. Det andra delarbetet undersökte prognosen för patienter med olika fynd vid DT kranskärl. Genom registersamkörning erhölls data om kranskärlsrelaterad sjukdom med uppföljningstid på upp till 7.5 år. Det tredje delarbetet utvärderade en AI-mjukvara som utförde automatiska mätningar av kranskärlskalk, baserat på kliniskt utförda DT-undersökningar för detta ändamål (calcium scoring). Tiden för att erhålla mätningarna registrerades också. Resultaten jämfördes med en standardreferens, vilken utgjordes av en konventionell, semi-automatisk metod. Det fjärde delarbetet utvärderade förmågan att kvantifiera kranskärlskalk från avlidna med FRDT. Bilder från både FR-DT och DT användes för kvantifiering av kalkvolym och jämfördes med en standardreferens, vilken utgjordes av micro-DT.

Korrelationen och överenstämmelsen mellan mjukvarorna och standardreferenserna var god för tryckfallberäkningarna över kranskärlsförträngningar, och mycket god för AI-baserad mätning av kranskärlskalk. Båda mjukvarorna hade tidsbesparande potential. För patienter med normala kranskärl var prognosen utmärkt, men den försämrades med ökad grad av kranskärlssjukdom. Användande av FR-DT bidrog till en bättre noggrannhet än DT vid kvantifiering av kranskärlskalk. Avhandlingen förmedlar värdet av teknisk utveckling vid utredning med DT för misstänkt kranskärlssjukdom. Dessutom presenteras nya, prognostiska data. Resultaten kan gynna patienten genom skärpt diagnostik och mer effektiva utredningar, vilket kan ge framtida ekonomiska effekter. Därtill kan de prognostiska resultaten bidra till förbättrade, kliniska uppföljningsstrategier.

Get ready for your AP Physics 2 exam with this straightforward, easy-to-follow study guide—updated for all the latest exam changes 5 Steps to a 5: AP Physics 2 features an effective, 5-step plan to guide your preparation program and help you build the skills, knowledge, and test-taking confidence you need to succeed. This fully revised edition covers the latest course syllabus and matches the latest exam. The book provides access to McGraw-Hill Education's interactive AP Planner app, which will enable you to receive a customizable study schedule on

their mobile device. Bonus app features daily assignment notifications, plus extra practice questions to assess test readiness 2 complete practice AP Physics 2 exams 3 separate study plans to fit your learning style

Many aspects of modern life have become personalized, yet healthcare practices have been lagging behind in this trend. It is now becoming more common to use big data analysis to improve current healthcare and medicinal systems, and offer better health services to all citizens. Applying Big Data Analytics in Bioinformatics and Medicine is a comprehensive reference source that overviews the current state of medical treatments and systems and offers emerging solutions for a more personalized approach to the healthcare field. Featuring coverage on relevant topics that include smart data, proteomics, medical data storage, and drug design, this publication is an ideal resource for medical professionals, healthcare practitioners, academicians, and researchers interested in the latest trends and techniques in personalized medicine.

In this comprehensive look at adolescent screening and holistic health in the technology age, Dr. Vincent Morelli reviews the history of the adolescent health screen, what is being used now, and what needs to be considered in the future. An ideal resource for primary care physicians, pediatricians, and others in health care who work with adolescents, it consolidates today's available information on

this timely topic into a single convenient resource. Covers the history of the adolescent medical history and the need for an update of the biopsychosocial model, which has not significantly changed since 1977. Discusses nutrition screening, sleep screening, exercise screening, adverse childhood experiences (ACEs) screening, educational screening, behavioral and emotional screening, and more. Presents the knowledge and experience of leading experts who have assembled the most up-to-date recommendations for adolescent health screening. Explores today's knowledge of health screening and discusses future directions to ensure healthy habits in adolescents, including education and self-efficacy.

Based largely on an International Commission on Dynamical Meteorology (ICDM) workshop, this timely volume, written by leading researchers in the field, covers a range of important research issues related to high-impact weather and extreme climate events. Dynamical linkages between these extremes and various atmospheric and ocean phenomena are examined, including Atlantic Multidecadal, North Atlantic, and Madden–Julian Oscillations; Annular Modes; tropical cyclones; and Asian monsoons. This book also examines the predictability of high-impact weather and extreme climate events on multiple time scales. Highlighting recent research and new advances in the field, this book

enhances understanding of dynamical and physical processes associated with these events to help managers and policy makers make informed decisions to manage risk and prevent or mitigate disasters. It also provides guidance on future research directions in atmospheric science, meteorology, climate science, and weather forecasting, for experts and young scientists.
In Silico Drug Design: Repurposing Techniques and Methodologies explores the application of computational tools that can be utilized for this approach. The book covers theoretical background and methodologies of chem-bioinformatic techniques and network modeling and discusses the various applied strategies to systematically retrieve, integrate and analyze datasets from diverse sources. Other topics include in silico drug design methods, computational workflows for drug repurposing, and network-based in silico screening for drug efficacy. With contributions from experts in the field and the inclusion of practical case studies, this book gives scientists, researchers and R&D professionals in the pharmaceutical industry valuable insights into drug design. Discusses the theoretical background and methodologies of useful techniques of cheminformatics and bioinformatics that can be applied for drug repurposing Offers case studies relating to the in silico modeling of FDA-approved drugs for the discovery of antifungal, anticancer, antiplatelet agents, and for drug therapies

against diseases Covers tools and databases that can be utilized to facilitate in silico methods for drug repurposing

The Psychology Express undergraduate revision guide series will help you understand key concepts quickly, revise effectively and make your answers stand out.

Performance assessment is a hot topic in school systems, and educators continue to analyze its costs, benefits, and feasibility as a replacement for high-stakes testing. Until now, researchers and policymakers have had to dig to find out what we know and what we still have to learn about performance assessment. Beyond the Bubble Test: How Performance Assessments Support 21st Century Learning synthesizes the latest findings in the field, and not a moment too soon. Statistics indicate that the United States is in danger of falling behind if it fails to adapt to our changing world. The memory and recall strategies of traditional testing are no longer adequate to equip our students with the skills they need to excel in the global economy. Instead teachers need to engage students in deeper learning, assessing their ability to use higher-order skills. Skills like synthesizing information, understanding evidence, and critical problem-solving are not achieved when we teach to multiple-choice exams. Examples in Beyond the Bubble Test paint a useful picture of how schools can begin to supplement traditional tests with something that works better. This book provides new perspectives on current performance assessment research, plus an incisive look at what's possible

at the local and state levels. Linda Darling-Hammond, with a team of leading scholars, bring together lessons learned, new directions, and solid recommendations into a single, readily accessible compendium. Beyond the Bubble Test situates the current debate on performance assessment within the context of testing in the United States. This comprehensive resource also looks beyond our U.S. borders to Singapore, Hong Kong, and other places whose reform-mindedness can serve as an example to us. Presents a study plan to build knowledge and confidence, discusses study skills and strategies, reviews core concepts, and includes one diagnostic exam and two practice exams.

This book explores outcome modeling in cancer from a data-centric perspective to enable a better understanding of complex treatment response, to guide the design of advanced clinical trials, and to aid personalized patient care and improve their quality of life. It contains coverage of the relevant data sources available for model construction (panomics), ranging from clinical or preclinical resources to basic patient and treatment characteristics, medical imaging (radiomics), and molecular biological markers such as those involved in genomics, proteomics and metabolomics. It also includes discussions on the varying methodologies for predictive model building with analytical and data-driven approaches. This book is primarily intended to act as a tutorial for newcomers to the field of outcome modeling, as it includes in-depth how-to recipes on modeling artistry while providing sufficient instruction on how such models can approximate the

physical and biological realities of clinical treatment. The book will also be of value to seasoned practitioners as a reference on the varying aspects of outcome modeling and their current applications. Features: Covers top-down approaches applying statistical, machine learning, and big data analytics and bottom-up approaches using first principles and multi-scale techniques, including numerical simulations based on Monte Carlo and automata techniques Provides an overview of the available software tools and resources for outcome model development and evaluation, and includes hands-on detailed examples throughout Presents a diverse selection of the common applications of outcome modeling in a wide variety of areas: treatment planning in radiotherapy, chemotherapy and immunotherapy, utility-based and biomarker applications, particle therapy modeling, oncological surgery, and the design of adaptive and SMART clinical trials

Declining academic performance, along with a growing apathy of students toward the value of education, demonstrates that students in the United States public education system do not recognize the value of a positive experience in middle schools. A plethora of research and writing has been done on elementary schools and secondary schools, but middle school education, as a whole, has been left behind. For this reason, there is the need for current research on all aspects and topics that may contribute to middle school student success. Promoting Positive Learning Experiences in Middle School Education focuses on the ideal conditions for maximizing student success and

engagement in middle school education. The chapters take a deeper look into the modern tools, technologies, methods, and theories driving current research on middle school students, their teachers, their classroom environment, and their learning. Highlighting topics such as curriculum reform, instructional strategies and practices, effective teaching, and technology in the modern classroom, this book is ideally intended for middle school teachers, middle school administrators, and school district administrators, along with practitioners, stakeholders, researchers, academicians, and students interested in middle school education and student success.

Bringing together conventional contrast media studies, computed tomography, ultrasound, magnetic resonance imaging, radionuclide imaging including hybrid imaging using SPECT-CT and PET-CT, DXA studies and digital interventional procedures into one volume, this definitive book is the essential source of information on the use and application of these imaging modalities in radiography. Taking a systemic anatomical approach, carefully designed to be clear and consistent throughout and mirroring that in the popular and established textbook Clark's Positioning in Radiography, each chapter is highly illustrated and contains sections detailing anatomy, pathologic considerations, procedure methodology, and an evaluation of recommended imaging modalities. Reflecting the latest clinical imaging pathways and referral guidelines including IR(ME)R 2017, the Map of Medicine and RCR iRefer (8E), Clark's Diagnostic Imaging Procedures will quickly become established as the standard textbook for students of

radiography and radiographer assistant trainees and an invaluable desk reference for practising radiologists.

Featuring expert guidance from Drs. James de Lemos and Torbjørn Omland, as well as other globally known leaders in cardiology, Chronic Coronary Artery Disease covers every aspect of managing and treating patients suffering from chronic coronary syndromes. This brand-new companion to Braunwald's Heart Disease was designed as a stand-alone reference for physicians treating patients who present with complex, unique challenges, offering the latest information on the use of imaging modalities in diagnosis and treatment, advances in interventional and surgical approaches to revascularization, new medications to improve symptoms and outcomes in chronic CAD, and much more. Covers every aspect of evaluation and treatment of patients who suffer from chronic coronary syndromes. Provides both evidenced based recommendations from the most recent guidelines from the major cardiology societies: AHA, ACC, and ESC, as well as practical management tips from leading experts with extensive clinical experience. Highlights new developments concerning epidemiology and prevention, pathophysiology, and clinical findings, as well as laboratory testing, invasive and non-invasive testing, risk stratification, clinical decision-making, and prognosis and management of chronic coronary syndromes. Features information on today's hot topics, including the use of novel imaging modalities in diagnosis and treatment and emerging therapies to improve outcomes in chronic CAD.