

Physics In Context For Cambridge International

Nobel Laureate Steven Weinberg explains the foundations of modern physics in historical context for undergraduates and beyond.

Meets the requirements of the NSW Physics Stage 6 revised syllabus, offering students a comprehensive text for the HSC course. Text is organised so that students can monitor their progress, test their understanding and revise key concepts and ideas at their own pace.

Physics in Context for Cambridge International AS & A LevelOxford University Press - Children

The Cambridge IGCSE Physics Coursebook has been written and developed to provide full support for the University of Cambridge International Examinations (CIE) IGCSE Physics syllabus (0625). The book is in full colour and includes a free CD-ROM. Topics are introduced in terms of their relevance to life in the 21st century. The CD-ROM offers a full range of supporting activities for independent learning, with exemplar examination questions and worked answers with commentary. Activity sheets and accompanying notes are also included on the CD-ROM.Written and developed to provide full support for the Cambridge IGCSE Physics syllabus offered by CIE.

Print Student Book

Cosmological Physics

Essential Physics for Cambridge IGCSE

Advanced General Relativity

Physics in Context for Cambridge International AS & A Level

Focused on grade improvement, this Exam Success Guide thoroughly prepares students for assessment, raising attainment levels in Cambridge International AS & A Level examinations and beyond. The guide includes sample questions and answers, examiner tips and practical advice, including detailed guidance on examination criteria, bringing clarity and focus to exam preparation.

Uniting the foundations of physics and biology, this groundbreaking multidisciplinary and integrative book explores life as a planetary process.

Covering the latest Cambridge A Level Physics syllabus (9702), this digital resource supports advanced science skills. It helps build long-term performance, as well as supporting confidence for the Cambridge exams. The practical approach helps to make science meaningful - ideal for students planning to study science at university.

Deals with the twistor treatment of certain linear and non-linear partial differential equations. The description in terms of twistors involves algebraic and differential geometry, and several complex variables.

The Scalar-Tensor Theory of Gravitation

Chemistry in Context for Cambridge International AS & A Level

The Physics of Energy

Physics in Context for Cambridge International AS and a Level 2nd Edition

An advanced textbook covering important modern developments in depth rather than attempting an encyclopaedic approach.

Covering the latest Cambridge A Level Physics syllabus (9702), this stretching resource supports advanced science skills. It helps build long-term performance, as well as supporting confidence for the Cambridge exams. The practical approach helps to make science meaningful - ideal for students planning to study science at university.

This edition of our successful series to support the Cambridge IGCSE Physics syllabus (0625) is fully updated for the revised syllabus for first examination from 2016. Written by an experienced teacher who is passionate about practical skills, the Cambridge IGCSE® Physics Practical Workbook makes it easier to incorporate practical work into lessons. This Workbook provides interesting and varied practical investigations for students to carry out safely, with guided exercises designed to develop the essential skills of handling data, planning investigations, analysis and evaluation. Exam-style questions for each topic offer novel scenarios for students to apply their knowledge and understanding, and to help them to prepare for their IGCSE Physics paper 5 or paper 6 examinations.

An easily accessible introduction to quantum field theory via Feynman rules in particle physics.

The Cambridge Handbook of Physics Formulas

The Bridge Connecting Algebra, Modular Forms and Physics

"A" Level Physics

Diagrammatica

Cambridge IGCSE® Physics Practical Workbook

Support understanding for the latest Cambridge IGCSE Physics syllabus (0625) for first examination in 2016. The clear, concise approach will support your EAL learners in understanding crucial scientific concepts. A step-by-step approach to the syllabus will help every learner reach their potential in science. Ensuring you will cover everything, this digital second edition is matched to the latest Cambridge syllabus. It is written by an examiner, to help you support assessment confidence.

This title is endorsed by Cambridge Assessment International Education to support the full syllabus for examination from 2022. Confidently navigate the updated Cambridge International AS & A Level Physics (9702) syllabus with a structured approach ensuring that the link between theory and practice is consolidated, scientific skills are applied, and analytical skills developed. - Enable students to monitor and build progress with short 'self-assessment' questions throughout the student text, with answers at the back of the book, so students can check their understanding as they work their way through the chapters. - Build scientific communication skills and vocabulary in written responses with a variety of exam-style questions. - Encourage understanding of historical context and scientific applications with extension boxes in the student text. - Have confidence that lessons cover the syllabus completely with a free Scheme of Work available online. - Provide additional practice with the accompanying write-in Practical Skills Workbooks, which once completed, can also be used to recap learning for revision. Also available in the series: Biology Student Book 9781510482876 Chemistry Student Book 9781510480230 Biology Student eTextbook 9781510482913 Biology Whiteboard eTextbook 9781510482920 Chemistry Student eTextbook 9781510482999 Chemistry Whiteboard eTextbook 9781510483002 Physics Student eTextbook 9781510483118 Physics Whiteboard eTextbook 9781510483125 Biology Skills Workbook 9781510482869 Chemistry Skills Workbook 9781510482852 Physics Skills Workbook 9781510482845

Einstein's General Theory of Relativity leads to two remarkable predictions: first, that the ultimate destiny of many massive stars is to undergo gravitational collapse and to disappear from view, leaving behind a 'black hole' in space; and secondly, that there will exist singularities in space-time itself. These singularities are places where space-time begins or ends, and the presently known laws of physics break down. They will occur inside black holes, and in the past are what might be construed as the beginning of the universe. To show how these predictions arise, the authors discuss the General Theory of Relativity in the large. Starting with a precise formulation of the theory and an account of the necessary background of differential geometry, the significance of space-time curvature is discussed and the global properties of a number of exact solutions of Einstein's field equations are examined. The theory of the causal structure of a general space-time is developed, and is used to study black holes and to prove a number of theorems establishing the inevitability of singularities under certain conditions. A discussion of the Cauchy problem for General Relativity is also included in this 1973 book.

As a result of the growth in popularity of modular syllabuses, and the introduction by the Schools Curriculum Authority of new core criteria, this new edition of A-Level physics not only covers these changes but also incorporates the latest exam questions..

Essential Physics for Cambridge Lower Secondary Stage 9 Student Book

Scaling and Renormalization in Statistical Physics

An Introduction to Nuclear Physics

Cambridge IGCSE Physics Coursebook with CD-ROM

Moonshine beyond the Monster

This title is endorsed by Cambridge Assessment International Education to support the full syllabus for examination from 2022. Confidently navigate the updated Cambridge International AS & A Level Biology (9700) syllabus with a structured approach ensuring that the link between theory and practice is consolidated, scientific skills are applied, and analytical skills developed. - Enable students to monitor and build progress with short 'self-assessment' questions throughout the student text, with answers at the back of the book, so students can check their understanding as they work their way through the chapters. - Build scientific communication skills and vocabulary in written responses with a variety of exam-style questions. - Encourage understanding of historical context and scientific applications with extension boxes in the student text. - Have confidence that lessons cover the syllabus completely with a free Scheme of Work available online. - Provide additional practice with the accompanying write-in Practical Skills Workbooks, which once completed, can also be used to recap learning for revision.

A most systematic study of how to interpret probabilistic assertions in the context of statistical mechanics.

An invaluable quick-reference aid of more than 2000 of the most useful maths and physics formulas.

Since its emergence in the early twentieth century, quantum theory has become the fundamental physical paradigm, and is essential to our understanding of the world. Providing a deeper understanding of the microscopic world through quantum theory, this supplementary text reviews a wider range of topics than conventional textbooks. Emphasis is given to modern entanglement, quantum teleportation, and Bose-Einstein condensation. Macroscopic quantum effects of practical relevance, for example superconductivity and the quantum Hall effect, are also described. Looking to the future, the author discusses the exciting prospects for quantum computing. Physical, rather than formal, explanations are given, and mathematical formalism is kept to a minimum so

readers can understand the concepts more easily. Theoretical discussions are combined with a description of the corresponding experimental results. This book is ideal for undergraduate and graduate students in quantum theory and quantum optics.

Astrophysics for Physicists

Foundations of Modern Physics

Exam Success in Physics for Cambridge AS & A Level

Physics in Context for Cambridge International AS and a Level Print and Online Student Book Pack

High-pT Physics in the Heavy Ion Era

This text provides a thoroughly modern graduate-level introduction to the theory of critical behaviour. It begins with a brief review of phase transitions in simple systems, then goes on to introduce the core ideas of the renormalisation group.

Unique in its coverage of all aspects of modern particle physics, this textbook provides a clear connection between the theory and recent experimental results, including the discovery of the Higgs boson at CERN. It provides a comprehensive and self-contained description of the Standard Model of particle physics suitable for upper-level undergraduate students and graduate students studying experimental particle physics. Physical theory is introduced in a straightforward manner with full mathematical derivations throughout. Fully-worked examples enable students to link the mathematical theory to results from modern particle physics experiments. End-of-chapter exercises, graded by difficulty, provide students with a deeper understanding of the subject. Online resources available at

www.cambridge.org/MPP feature password-protected fully-worked solutions to problems for instructors, numerical solutions and hints to the problems for students and PowerPoint slides and JPEGs of figures from the book.

This clear and concise introduction to nuclear physics provides an excellent basis for a core undergraduate course in this area. The book opens by setting nuclear physics in the context of elementary particle physics and then shows how simple models can provide an understanding of the properties of nuclei, both in their ground states and excited states, and also of the nature of nuclear reactions. The book also includes chapters on nuclear fission, its application in nuclear power reactors, the role of nuclear physics in energy production and nucleosynthesis in stars. This second edition contains several additional topics: muon-catalysed fusion, the nuclear and neutrino physics of supernovae, neutrino mass and neutrino oscillations, and the biological effects of radiation. A knowledge of basic quantum mechanics and special relativity is assumed. Appendices deal with other more specialized topics. Each chapter ends with a set of problems for which outline solutions are provided.

Covering the latest Cambridge A Level Physics syllabus (9702), this print and online bundle supports advanced science skills. It helps build long-term performance, as well as supporting confidence for the Cambridge exams. The practical approach helps to make science meaningful - ideal for students planning to study science at university

Physics in Context for Cambridge International AS and a Level Student Book

Modern Particle Physics

The Forces of Life HSC

The Origin and Nature of Life on Earth

Cambridge International AS & A Level Complete Physics

Written specifically for Cambridge Assessment International Education's revised Lower Secondary syllabus, this series provides complete curriculum framework coverage for Stages 7-9. It has been written by an experienced author team and provides a seamless link into Cambridge IGCSE, maximising students' potential.

Designed for teaching astrophysics to physics students at advanced undergraduate or beginning graduate level, this textbook also provides an overview of astrophysics for astrophysics graduate students, before they delve into more specialized volumes. Assuming background knowledge at the level of a physics major, the textbook develops astrophysics from the basics without requiring any previous study in astronomy or astrophysics. Physical concepts, mathematical derivations and observational data are combined in a balanced way to provide a unified treatment. Topics such as general relativity and plasma physics, which are not usually covered in physics courses but used extensively in astrophysics, are developed from first principles. While the emphasis is on

developing the fundamentals thoroughly, recent important discoveries are highlighted at every stage.

First-ever comprehensive introduction to the major new subject of quantum computing and quantum information.

The first comprehensive survey of (2+1)-dimensional quantum gravity - for graduate students and researchers.

The Concept of Probability in Statistical Physics

Classical Covariant Fields

Physics and Chemistry of Earth Materials

The Large Scale Structure of Space-Time

Introduction to Quantum Theory

This book was originally published in 2006. Moonshine forms a way of explaining the mysterious connection between the monster finite group and modular functions from classical number theory. The theory has evolved to describe the relationship between finite groups, modular forms and vertex operator algebras. Moonshine Beyond the Monster describes the general theory of Moonshine and its underlying concepts, emphasising the interconnections between mathematics and mathematical physics. Written in a clear and pedagogical style, this book is ideal for graduate students and researchers working in areas such as conformal field theory, string theory, algebra, number theory, geometry and functional analysis. Containing over a hundred exercises, it is also a suitable textbook for graduate courses on Moonshine and as supplementary reading for courses on conformal field theory and string theory.

The scalar-tensor theory of gravitation is one of the most popular alternatives to Einstein's theory of gravitation. This book provides a clear and concise introduction to the theoretical ideas and developments, exploring scalar fields and placing them in context with a discussion of Brans-Dicke theory. Topics covered include the cosmological constant problem, time variability of coupling constants, higher dimensional space-time, branes and conformal transformations. The authors emphasize the physical applications of the scalar-tensor theory and thus provide a pedagogical overview of the subject, keeping more mathematically detailed sections for the appendices. This book is suitable for graduate courses in cosmology, gravitation and relativity. It will also provide a valuable reference for researchers.

Physics in Context is a complete, full colour A Level Physics course, following the Cambridge International AS and A Level Physics syllabus. The excellent presentation and direct language ensures all students will find the text readable and the subject accessible.

A comprehensive and authoritative introduction to contemporary cosmology for advanced undergraduate and graduate students.

The Emergence of the Fourth Geosphere

Physics in Context for Cambridge International a Level

The Path to Feynman Diagrams

Advanced Condensed Matter Physics

Cambridge International AS & A Level Physics Student's Book 3rd edition

With an approach that stresses the fundamental solid state behaviour of minerals, this 1995 text surveys the physics and chemistry of earth materials.

A self-contained introduction to advanced general relativity.

Mapped to the latest Cambridge A Level Physics syllabus (9702), this comprehensive resource supports students with its stretching, problem solving approach. It helps foster long-term performance in science, as well as building their confidence for the Cambridge examinations. The practical approach helps to make science meaningful, so it is ideal for students planning to study science at university. Includes support for the new Key Concepts -developing Cambridge students' subject knowledge and encouraging them to make links between topics.

The ever-popular Chemistry In Context resource has been updated by the experienced author team to provide chemistry students with a comprehensive and dependable textbook for their studies, regardless of syllabus. Mapped to the latest Cambridge AS & A Level Chemistry syllabus (9701), this text supports students with its stretching, problem-solving approach. It helps foster long-term performance in chemistry, as well as building students' confidence for their upcoming examinations. The practical approach helps to make chemistry meaningful and contextual, building foundations for further education.

Quantum Gravity in 2+1 Dimensions

Student Materials

Quantum Computation and Quantum Information

Cambridge International AS & A Level Biology Student's Book 2nd edition

Physics in Context

A comprehensive and unified introduction to the science of energy sources, uses, and systems for students, scientists, engineers, and professionals.

This 2002 book discusses the classical foundations of field theory, using the language of variational methods and covariance. It explores the limits of what can be achieved with purely classical notions, and shows how these have a deep and important connection with the second quantized field theory, which follows on from the Schwinger Action Principle. The book takes a pragmatic view of field

theory texts and cataloging results which are often hard to find in the literature. Care is taken to explain how results arise and how to interpret them physically, for graduate students starting out in the field. Many physical examples are provided, making the book an ideal supplementary text for courses on elementary field theory, group theory and dynamical systems. It will also be a valuable resource for researchers.

Aimed at graduate students and researchers in the field of high-energy nuclear physics, this book provides an overview of the basic concepts of large transverse momentum particle physics, with a focus on pQCD phenomena. It examines high-pT probes of relativistic heavy-ion collisions and will serve as a handbook for those working on RHIC and LHC data analyses. Starting with an introduction to experimental techniques, concentrating on relativistic particle kinematics, before moving onto a discussion about the origins of high-pT physics. The main features of high-pT physics are placed within a historical context and the authors adopt an experimental outlook, highlighting the most important discoveries leading up to the foundation of modern QCD theory. Advanced methods are described

Twistor Geometry and Field Theory