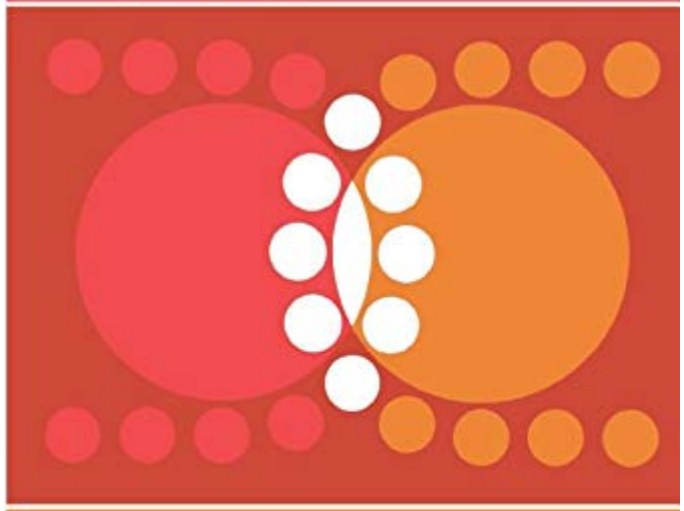
The Classical Theory of Fields

Fourth Revised English Edition

Course of Theoretical Physics
Volume 2

L. D. Landau and E. M. Lifshitz
Institute of Physical Problems
USSR Academy of Sciences



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It is your enormously own times to accomplishment reviewing habit. in the middle of guides you could enjoy now is **Course of Theoretical Physics, Volume 2, Volume 2, Fourth Edition: The Classical Theory of Fields** below.

Course of Theoretical Physics-L. D. Landau 2013-06-01 Course of Theoretical Physics, Volume 5: Statistical Physics, Third Edition, Part 1 covers the fundamental principles of statistical physics and thermodynamic quantities. The book discusses the Gibbs and Maxwellian distributions; the Boltzmann distribution for ideal gases; and the Fermi and Bose distributions. Solids are tackled with regard to their application of statistical methods of calculating the thermodynamic quantities. The book describes the deviations of gases from the ideal state, conditions of phase equilibrium, solutions, and chemical reactions. The text also discusses the properties of matter at very high density; the Gaussian distribution; fluctuations of the fundamental thermodynamic quantities; and fluctuations in solids and ideal gases. The symmetry of crystals; phase transitions of the second kind and critical phenomena; and surfaces are considered as well. Students taking statistical physics and those involved in the areas of statistical physics will find the book invaluable.

Physical Kinetics-E.M. Lifshitz 1995 This volume is mainly concerned with a systematic development of the theory of plasmas, the authority being firmly rooted in the pioneering work of Landau. Corresponding results are also given for partially ionized plasmas, relativistic plasmas, degenerate or non-ideal plasmas and solid state plasmas.

The Classical Theory of Fields-L D Landau 2013-10-22 Translated from the 6th Russian edition, this latest edition contains seven new sections with chapters on General Relativity, Gravitational Waves and Relativistic Cosmology, where Professor Lifshitz's interests lay. The text of the 3rd English edition has been thoroughly revised and additional problems inserted

Fluid Mechanics-L D Landau 2013-09-03 Fluid Mechanics, Second Edition deals with fluid mechanics, that is, the theory of the motion of liquids and gases. Topics covered range from ideal fluids and viscous fluids to turbulence, boundary layers, thermal conduction, and diffusion. Surface phenomena, sound, and shock waves are also discussed, along with gas flow, combustion, superfluids, and relativistic fluid dynamics. This book is comprised of 16 chapters and begins with an overview of the fundamental equations of fluid dynamics, including Euler's equation and Bernoulli's equation. The reader is then introduced to the equations of motion of a viscous fluid; energy dissipation in an incompressible fluid; damping of gravity waves; and the mechanism whereby turbulence occurs. The following chapters explore the laminar boundary layer; thermal conduction in fluids; dynamics of diffusion of a mixture of fluids; and the phenomena that occur near the surface separating two continuous media. The energy and momentum of sound waves; the direction of variation of quantities in a shock wave; one- and two-dimensional gas flow; and the intersection of surfaces of discontinuity are also also considered. This monograph will be of interest to theoretical physicists.

Statistical Physics-L D Landau 2013-10-22 A lucid presentation of statistical physics and thermodynamics which develops from the general principles to give a large number of applications of the theory.

Fluid Mechanics-L D Landau 1987-08-17 This is the most comprehensive introductory graduate or advanced undergraduate text in fluid mechanics available. It builds up from the fundamentals, often in a general way, to widespread applications, to technology and geophysics. New to this second edition are discussions on the universal dimensions similarity scaling for the laminar boundary layer equations and on the generalized vector field derivatives. In addition, new material on the generalized streamfunction treatment shows how streamfunction may be used in three-dimensional flows. Finally, a new Computational Fluid Dynamics chapter enables compulations of some simple flows and provides entry to more advanced literature. * Basic introduction to the subject of fluid mechanics, intended for undergraduate and beginning graduate students of science and engineering. * Includes topics of special interest for geophysicists and to engineers. * New and generalized treatment of similar laminar boundary layers, streamfunctions for three-dimensional flows, vector field derivatives, and gas dynamics. Also a new generalized treatment of boundary conditions in fluid mechanics, and expanded treatment of viscous flows.

Course of Theoretical Physics. Vol. 3-L. D. Landau 1958

A Shorter Course of Theoretical Physics: Mechanics and electrodynamics-Lev Davidovich Landau 1972

Fluid Mechanics-LEV D AUTOR LANDAU 1987

Mechanics and Electrodynamics-L D Landau 2013-10-22 Largely a condensed amalgamation of two previous books by the same authors - Mechanics and The Classical Theory of Fields - omitting the rather more advanced topics such as general relativity.

Quantum Mechanics-L D Landau 2013-10-22 Quantum Mechanics deals with various aspects of quantum mechanics and covers topics ranging from the uncertainty principle and the principle of superposition to conservation laws, Schrödinger's equation, and perturbation theory. Spin, radiation, and the identity of particles are also discussed, along with the atom, the diatomic molecule, elastic and inelastic collisions, and Feynman diagrams. Comprised of 16 chapters, this volume begins with an overview of non-relativistic quantum theory and the basic concepts of quantum mechanics such as the principles of uncertainty and superposition, operators, and the density matrix. Subsequent chapters deal with conservation laws in quantum mechanics; Schrödinger's equation and general properties of its solutions; perturbations independent of time and dependent on time; spin and the spin operator; and the principle of indistinguishability of similar particles. The atom and its electron states are also examined, together with diatomic molecules; elastic and inelastic collisions; photons and electrons; Dirac's equation; and particles and antiparticles. The final chapter is devoted to Feynman diagrams, paying particular attention to the scattering matrix, radiative corrections, and radiative shift of atomic levels. This book will be of interest to physicists.

Theory of Elasticity-L D Landau 2012-12-02 A comprehensive textbook covering not only the ordinary theory of the deformation of solids, but also some topics not usually found in textbooks on the subject, such as thermal conduction and viscosity in solids.

A Course in Theoretical Physics-P. John Shepherd 2013-01-10 This book is a comprehensive account of five extended modules covering the key branches of twentieth-century theoretical physics, taught by the author over a period of three decades to students on bachelor and master university degree courses in both physics and theoretical physics. The modules cover nonrelativistic quantum mechanics, thermal and statistical physics, many-body theory, classical field theory (including special relativity and electromagnetism), and, finally, relativistic quantum mechanics and gauge theories of quark and lepton interactions, all presented in a single, self-contained volume. In a number of universities, much of the material covered (for example, on Einstein’s general theory of relativity, on the BCS theory of superconductivity, and on the Standard Model, including the theory underlying the prediction of the Higgs boson) is taught in postgraduate courses to beginning PhD students. A distinctive feature of the book is that

full, step-by-step mathematical proofs of all essential results are given, enabling a student who has completed a high-school mathematics course and the first year of a university physics degree course to understand and appreciate the derivations of very many of the most important results of twentieth-century theoretical physics.

Course of Theoretical Physics-Lev Davidovich Landau 1977

Relativistic Quantum Theory-Vladimir Borisovich Berestet͡skiĭ 1974

A Complete Course on Theoretical Physics-Albrecht Lindner 2018-12-30 Kompakt und verständlich führt dieses Lehrbuch in die Grundlagen der theoretischen Physik ein. Dabei werden die üblichen Themen der Grundvorlesungen Mechanik, Elektrodynamik, Relativitätstheorie, Quantenmechanik , Thermodynamik und Statistik in einem Band zusammengefasst, um den Zusammenhang zwischen den einzelnen Teilgebieten besonders zu betonen. Ein Kapitel mit mathematischen Grundlagen der Physik erleichtert den Einstieg. Zahlreiche Übungsaufgaben dienen der Vertiefung des Stoffes.

General Physics-L D Landau 2013-10-22 Presents, at a level suitable for undergraduates and technical college students, the basic physical theory of mechanics and the molecular structure of matter. The material contained in the work should correspond quite closely to courses of lectures given to undergraduate students of physics in Britain and America.

Quantum Mechanics-L D Landau 2013-10-22 Quantum Mechanics, Third Edition: Non-relativistic Theory is devoted to non-relativistic quantum mechanics. The theory of the addition of angular momenta, collision theory, and the theory of symmetry are examined, together with spin, nuclear structure, motion in a magnetic field, and diatomic and polyatomic molecules. This book is comprised of 18 chapters and begins with an introduction to the basic concepts of quantum mechanics, with emphasis on the uncertainty principle, the principle of superposition, and operators, as well as the continuous spectrum and the wave function. The following chapters explore energy and momentum; Schrödinger's equation; angular momentum; and motion in a centrally symmetric field and in a magnetic field. Perturbation theory, spin, and the properties of quasi-classical systems are also considered. The remaining chapters deal with the identity of particles, atoms, and diatomic and polyatomic molecules. The final two chapters describe elastic and inelastic collisions. This monograph will be a valuable source of information for physicists.

The Theoretical Minimum-Leonard Susskind 2014-04-22 A Wall Street Journal Best Book of 2013 If you ever regretted not taking physics in college--or simply want to know how to think like a physicist--this is the book for you. In this bestselling introduction, physicist Leonard Susskind and hacker-scientist George Hrabovsky offer a first course in physics and associated math for the ardent amateur. Challenging, lucid, and concise, The Theoretical Minimum provides a tool kit for amateur scientists to learn physics at their own pace.

A Course in Mathematical Physics 3-Walter Thirring 2013-11-11 In this third volume of A Course in Mathematical Physics I have attempted not simply to introduce axioms and derive quantum mechanics from them, but also to progress to relevant applications. Reading the axiomatic litera ture often gives one the impression that it largely consists of making refined axioms, thereby freeing physics from any trace of down-to-earth residue and cutting it off from simpler ways of thinking. The goal pursued here, however, is to come up with concrete results that can be compared with experimental facts. Everything else should be regarded only as a side issue, and has been chosen for pragmatic reasons. It is precisely with this in mind that I feel it appropriate to draw upon the most modern mathematical methods. Only by their means can the logical fabric of quantum theory be woven with a smooth structure; in their absence, rough spots would . inevitably appear, especially in the theory of unbounded operators, where the details are too intricate to be comprehended easily. Great care has been taken to build up this mathematical weaponry as completely as possible, as it is also the basic arsenal of the next volume. This means that many proofs have been tucked away in the exercises. My greatest concern was to replace the ordinary cal culations of uncertain accuracy with better ones having error bounds, in order to raise the crude manners of theoretical physics to the more cultivated level of experimental physics.

Basic Theoretical Physics-Uwe Krey 2007-08-14 This concise treatment embraces, in four parts, all the main aspects of theoretical physics. Recent topics such as holography and quantum cryptography are included. The book summarizes what a graduate student, physicist working in industry, or a physics teacher should master during his or her degree course. It will also be useful for deepening one’s insight and it adds new dimensions to understanding of these elemental concepts.

Thermodynamics and Statistical Mechanics-Arnold Sommerfeld 1964

Electrodynamics of Continuous Media-L. D Landau 1960

Mechanics-L D Landau 1982-01-29 Devoted to the foundation of mechanics, namely classical Newtonian mechanics, the subject is based mainly on Galileo's principle of relativity and Hamilton's principle of least action. The exposition is simple and leads to the most complete direct means of solving problems in mechanics. The final sections on adiabatic invariants have been revised and augmented. In addition a short biography of L D Landau has been inserted.

A Course of Theoretical Physics - Volume 1 : Fundamental Laws (translated from the Russian).-Kompaneyets AS. 1978

Theoretical Physics 4-Wolfgang Nolting 2016-09-28 Der Grundkurs Theoretische Physik deckt in 7 Bänden alle für das Diplom und für Bachelor/Master-Studiengänge maßgeblichen Gebiete ab. Jeder Band vermittelt das im jeweiligen Semester notwendige theoretisch-physikalische Rüstzeug. Übungsaufgaben mit ausführlichen Lösungen dienen der Vertiefung des Stoffs. Der 4. Band behandelt die Gebiete Thermodynamik und Relativitätstheorie. Für die Neuauflage wurde er grundlegend überarbeitet und um 24 Aufgaben ergänzt. Durch die zweifarbige Gestaltung ist der Stoff jetzt noch übersichtlicher gegliedert.

Statistical Physics-Lev Davidovich Landau 1980-01-15 Part 2 of Statistical physics begins with an extensive discussion of the theory of quantum liquids, which was dealt with briefly in the second edition of Statistical physics, by Lev Landau and E.M. Lifshitz; part 1 of Statistical physics is now the third edition of volume 5 of the Course of theoretical physics, by L.D. Landau and E.M. Lifshitz.

Course of Theoretical Physics-L. P. Pitaevskii 2013-10-22 The approach to physical kinetics is closely integrated with that of other branches of physics as presented in the companion volumes of this series. The major part of the contents is concerned with a systematic development of the theory of plasmas, the authority being firmly rooted in the pioneer work of Landau. Although the main scope concerns fully ionized gaseous plasmas, corresponding results are also given for partially ionized plasmas, relativistic plasmas, degenerate or non-ideal plasmas and solid state plasmas. Problems (with answers) are to be found in the text. This work completes the Course of Theoretical Physics begun over 20 years ago

Relativistic Quantum Mechanics-Luciano Maiani 2015-11-18 Written by two of the most prominent leaders in particle physics, Relativistic Quantum Mechanics: An Introduction to Relativistic Quantum Fields provides a classroom-tested introduction to the formal and conceptual foundations of quantum field theory. Designed for advanced undergraduate- and graduate-level physics students, the text only requires previous courses in classical mechanics, relativity, and quantum mechanics. The introductory chapters of the book summarize the theory of special relativity and its application to the classical description of the motion of a free particle and a field. The authors then explain the quantum formulation of field theory through the simple example of a scalar field described by the Klein–Gordon equation as well as its extension to the case of spin 1⁄2 particles described by the Dirac equation. They also present the elements necessary for constructing the foundational theories of the standard model of electroweak interactions, namely quantum electrodynamics and the Fermi theory of neutron beta decay. Many applications to quantum electrodynamics and weak interaction processes are thoroughly analyzed. The book also explores the timely topic of neutrino oscillations. Logically progressing from the fundamentals to recent discoveries, this textbook provides students with the essential foundation to study more advanced theoretical physics and elementary particle physics. It will help them understand the theory of electroweak interactions and gauge theories. View the second book in this collection: Electroweak Interactions.

Electrodynamics of Continuous Media-L D Landau 2013-10-22 Covers the theory of electromagnetic fields in matter, and the theory of the macroscopic electric and magnetic properties of matter. There is a considerable amount of new material particularly on the theory of the magnetic properties of matter and the theory of optical phenomena with new chapters on spatial dispersion and non-linear optics. The chapters on ferromagnetism and antiferromagnetism and on magnetohydrodynamics have been substantially enlarged and eight other chapters have additional sections.

Mechanics-Lev Davidovich Landau 1960 Volume 1.

Lectures On Computation-Richard P. Feynman 1996-09-08 Covering the theory of computation, information and communications, the physical aspects of computation, and the physical limits of computers, this text is based on the notes taken by one of its editors, Tony Hey, on a lecture course on computation given b

Quantum Mechanics-Leonard Susskind 2014-02-25 From the bestselling author of The Theoretical Minimum, a DIY introduction to the math and science of quantum physics First he taught you classical mechanics. Now, physicist Leonard Susskind has teamed up with data engineer Art Friedman to present the theory and associated mathematics of the strange world of quantum mechanics. In this follow-up to The Theoretical Minimum, Susskind and Friedman provide a lively introduction to this famously difficult field, which attempts to understand the behavior of sub-atomic objects through mathematical abstractions. Unlike other popularizations that shy away from quantum mechanics' weirdness, Quantum Mechanics embraces the utter strangeness of quantum logic. The authors offer crystal-clear explanations of the principles of quantum states, uncertainty and time dependence, entanglement, and particle and wave states, among other topics, and each chapter includes exercises to ensure mastery of each area. Like The Theoretical Minimum, this volume runs parallel to Susskind's eponymous Stanford University-hosted continuing education course. An approachable yet rigorous introduction to a famously difficult topic, Quantum Mechanics provides a tool kit for amateur scientists to learn physics at their own pace.

Sensemaking in Organizations-Karl E. Weick 1995-05-31 The teaching of organization theory and the conduct of organizational research have been dominated by a focus on decision-making and the concept of strategic rationality. However, the rational model ignores the inherent complexity and ambiguity of real-world organizations and their environments. In this landmark volume, Karl E Weick highlights how the `sensemaking' process shapes organizational structure and behaviour. The process is seen as the creation of reality as an ongoing accomplishment that takes form when people make retrospective sense of the situations in which they find themselves.

Modern Course in Quantum Field Theory-Badis Ydri 2019-05-21 A Modern Course in Quantum Field Theory provides a self-contained pedagogical and constructive presentation of quantum field theory. Written for advanced students, the work provides complete material for a two or three semester course and includes numerous problem exercises, some with detailed solutions.

Superstring Theory: Volume 2, Loop Amplitudes, Anomalies and Phenomenology-Michael B Green 1988-07-29 A two-volume systematic exposition of superstring theory and its applications which presents many of the new mathematical tools that theoretical physicists are likely to need in coming years. This volume contains an introduction to superstrings

Theoretical Physics 7-Wolfgang Nolting 2017-09-27 This textbook offers a clear and comprehensive introduction to methods and applications in quantum mechanics, one of the core components of undergraduate physics courses. It follows on naturally from the previous volumes in this series, thus developing the understanding of quantized states further on. The first part of the book introduces the quantum theory of angular momentum and approximation methods. More complex themes are covered in the second part of the book, which describes multiple particle systems and scattering theory. Ideally suited to undergraduate students with some grounding in the basics of quantum mechanics, the book is enhanced throughout with learning features such as boxed inserts and chapter summaries, with key mathematical derivations highlighted to aid understanding. The text is supported by numerous worked examples and end of chapter problem sets. About the Theoretical Physics series Translated from the renowned and highly successful German editions, the eight volumes of this series cover the complete core curriculum of theoretical physics at undergraduate level. Each volume is self-contained and provides all the material necessary for the individual course topic. Numerous problems with detailed solutions support a deeper understanding. Wolfgang Nolting is famous for his refined didactical style and has been referred to as the "German Feynman" in reviews.

Qualitative Research Design-Joseph A. Maxwell 2005 Qualitative Research Design: An Interactive Approach, Second Edition provides researchers and students with a user-friendly, step-by-step guide to planning qualitative research. A bestseller in its First Edition, this invaluable book presents an innovative approach to the components of design and how they interact with each other. The text presents a clear strategy for creating coherent and workable relationships among these design components and highlights key design issues. Based on a course the author taught for seven years at the Harvard Graduate School of Education, the work is written in an informal, jargon-free style and incorporates many examples and hands-on exercises.

Mathematica for Theoretical Physics-Gerd Baumann 2006-01-16 Class-tested textbook that shows readers how to solve physical problems and deal with their underlying theoretical concepts while using Mathematica® to derive numeric and symbolic solutions. Delivers dozens of fully interactive examples for learning and implementation, constants and formulae can readily be altered and adapted for the user's purposes. New edition offers enlarged two-volume format suitable to courses in mechanics and electrodynamics, while offering dozens of new examples and a more rewarding interactive learning environment. Notebooks for problem solving and learning.

Early Life History and Recruitment in Fish Populations-R.C. Chambers 1997-07-31 Many of the processes influencing recruitment to an adult fish population or entry into a fishery occur very early in life. The variations in life histories and behaviours of young fish and the selective processes operating on this variation ultimately determine the identities and abundance of survivors. This important volume brings together contributions from many of the world's leading researchers from the field of fish ecology. The book focuses on three major themes of pressing importance in the analysis of the role that the early life history of fishes plays in the number and quality of recruits: the selective processes at play in their early life history; the contributions of early life history to the understanding of recruitment.