

Andrew Pressley Elementary Differential Geometry

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Elementary Topics in Differential Geometry - J. A. Thorpe 2012-12-06

In the past decade there has been a significant change in the freshman/ sophomore mathematics curriculum as taught at many, if not most, of our colleges. This has been brought about by the introduction of linear algebra into the curriculum at the sophomore level. The advantages of using linear algebra both in the teaching of differential equations and in the teaching of multivariate calculus are by now widely recognized. Several textbooks adopting this point of view are now available and have been widely adopted. Students completing the sophomore year now have a fair preliminary understanding of spaces of many dimensions. It should be apparent that courses on the junior level should draw upon and reinforce the concepts and skills learned during the previous year. Unfortunately, in differential geometry at least, this is usually not the case. Textbooks directed to students at this level generally restrict attention to 2-dimensional surfaces in 3-space rather than to surfaces of arbitrary dimension. Although most of the recent books do use linear algebra, it is only the algebra of ~ 3 . The student's preliminary understanding of higher dimensions is not cultivated.

Sheaf Theory - Glen Eugene Bredon 1967

Operations Research - D S Hira 1992

The author have used numerical examples as the means for presentation of the underlying ideas of different operations research techniques. Accordingly, a large number of comprehensive solved examples, taken from a variety of fields, have been added in every chapter and they are followed by a set of unsolved problems with answers (and hints wherever required) through which readers can test their understanding of the subject matter. The book, in its present form, contains around 650 examples, 1,280 illustrative diagrams.

Geometry from a Differentiable Viewpoint - John McCleary 2013

A thoroughly revised second edition of a textbook for a first course in differential/modern geometry that introduces methods within a historical context.

Elementary Differential Geometry - Andrew Pressley 2001

Curves and surfaces are objects that everyone can see, and many of the questions that can be asked about them are natural and easily understood. Differential geometry is concerned with the precise mathematical formulation of some of these questions, and with trying to answer them using calculus techniques. It is a subject that contains some of the most beautiful and profound results in mathematics, yet many of them are accessible to higher level undergraduates. Elementary Differential Geometry presents the main results in the differential geometry of curves and surfaces while keeping the prerequisites to an absolute minimum. Nothing more than first courses in linear algebra and multivariate calculus are required, and the most direct and straightforward approach is used at all times. Numerous diagrams illustrate both the ideas in the text and the examples of curves and surfaces discussed there. The second edition has extra exercises with solutions available to lecturers online. There is additional material on Map Colouring, Holonomy and geodesic curvature and various additions to existing sections.

Lecture Notes on Differential Geometry - Prakash Dabhi 2015-09-01

Document from the year 2015 in the subject Mathematics - Geometry, course: Differential Geometry, language: English, abstract: This is a Lecture Notes on a one semester course on Differential Geometry taught as a basic course in all M.Sc./M.S. programmes in Mathematics. This consists normally of curve

theory leading up to fundamental theorem of space curves as well as the Gauss theory of surfaces covering first fundamental form, second fundamental form, Gaussian curvature, geodesic and Gauss Bonnet theorem. This Lecture Notes is based on lectures I have given to M.Sc. Mathematics students of Sardar Patel University, Vallabh Vidyanagar, India. Here are the salient features of the Lecture Notes. Proofs of all assertions are completely given in a lucid student friendly manner. A large number of solved exercises are included. All these are to facilitate self study by the students. I have also adopted the modern approach to develop the classical topics treated here. The Lecture Notes is highly influenced by the approach adopted in Elementary Differential Geometry by Andrew Pressley and Differential Geometry of Curves and Surfaces by Manfredo P. do Carmo. I am indebted to these authors whose work have influenced my learning of the subject as well as the preparation of this Lecture Notes. I hope this little book would invite the students to the subject of Differential Geometry and would inspire them to look to some comprehensive books including those mentioned above.

Solutions of Exercises of Introduction to Differential Geometry of Space Curves and Surfaces - Taha Sochi 2022-10-13

This book contains the solutions of the exercises of my book: Introduction to Differential Geometry of Space Curves and Surfaces. These solutions are sufficiently simplified and detailed for the benefit of readers of all levels particularly those at introductory level.

Algebraic Geometry - Thomas A. Garrity 2013-02-01

Algebraic Geometry has been at the center of much of mathematics for hundreds of years. It is not an easy field to break into, despite its humble beginnings in the study of circles, ellipses, hyperbolas, and parabolas. This text consists of a series of ex

Curved Spaces - Pelham Mark Hedley Wilson 2014-05-14

This textbook uses examples, exercises, diagrams, and unambiguous proof, to help students make the link between classical and differential geometries.

Introduction to Smooth Manifolds - John M. Lee 2013-03-09

Author has written several excellent Springer books.; This book is a sequel to Introduction to Topological Manifolds; Careful and illuminating explanations, excellent diagrams and exemplary motivation; Includes short preliminary sections before each section explaining what is ahead and why

Differential Geometry of Curves and Surfaces - Shoshichi Kobayashi 2019-11-13

This book is a posthumous publication of a classic by Prof. Shoshichi Kobayashi, who taught at U.C. Berkeley for 50 years, recently translated by Eriko Shinozaki Nagumo and Makiko Sumi Tanaka. There are five chapters: 1. Plane Curves and Space Curves; 2. Local Theory of Surfaces in Space; 3. Geometry of Surfaces; 4. Gauss-Bonnet Theorem; and 5. Minimal Surfaces. Chapter 1 discusses local and global properties of planar curves and curves in space. Chapter 2 deals with local properties of surfaces in 3-dimensional Euclidean space. Two types of curvatures — the Gaussian curvature K and the mean curvature H — are introduced. The method of the moving frames, a standard technique in differential geometry, is introduced in the context of a surface in 3-dimensional Euclidean space. In Chapter 3, the Riemannian metric on a surface is introduced and properties determined only by the first fundamental form are discussed. The concept of a geodesic introduced in Chapter 2 is extensively discussed, and several examples of geodesics are presented with illustrations. Chapter 4 starts with a simple and elegant proof of

Stokes' theorem for a domain. Then the Gauss-Bonnet theorem, the major topic of this book, is discussed at great length. The theorem is a most beautiful and deep result in differential geometry. It yields a relation between the integral of the Gaussian curvature over a given oriented closed surface S and the topology of S in terms of its Euler number $\chi(S)$. Here again, many illustrations are provided to facilitate the reader's understanding. Chapter 5, Minimal Surfaces, requires some elementary knowledge of complex analysis. However, the author retained the introductory nature of this book and focused on detailed explanations of the examples of minimal surfaces given in Chapter 2.

Curves and Surfaces - Sebastián Montiel 2009

This introductory textbook puts forth a clear and focused point of view on the differential geometry of curves and surfaces. Following the modern point of view on differential geometry, the book emphasizes the global aspects of the subject. The excellent collection of examples and exercises (with hints) will help students in learning the material. Advanced undergraduates and graduate students will find this a nice entry point to differential geometry. In order to study the global properties of curves and surfaces, it is necessary to have more sophisticated tools than are usually found in textbooks on the topic. In particular, students must have a firm grasp on certain topological theories. Indeed, this monograph treats the Gauss-Bonnet theorem and discusses the Euler characteristic. The authors also cover Alexandrov's theorem on embedded compact surfaces in \mathbb{R}^3 with constant mean curvature. The last chapter addresses the global geometry of curves, including periodic space curves and the four-vertices theorem for plane curves that are not necessarily convex. Besides being an introduction to the lively subject of curves and surfaces, this book can also be used as an entry to a wider study of differential geometry. It is suitable as the text for a first-year graduate course or an advanced undergraduate course.

An Introduction to Differential Geometry - T. J. Willmore 2013-05-13

This text employs vector methods to explore the classical theory of curves and surfaces. Topics include basic theory of tensor algebra, tensor calculus, calculus of differential forms, and elements of Riemannian geometry. 1959 edition.

Tau Functions and their Applications - John Harnad 2021-02-04

A thorough introduction to tau functions, from the basics through to the most recent results, with applications in mathematical physics.

The Geometry of Heisenberg Groups - Ernst Binz 2008

This book presents basic geometric and algebraic properties of the Heisenberg group and its relation to the skew field of quaternions, symplectic structures and representations, and describes some of its applications. It offers a clear exposition of mathematical topics referring to applications in signal theory, physics and information theory. It has relevance for undergraduate and graduate students, a variety of researchers, and specialists in data processing.

Elementary Differential Geometry - A.N. Pressley 2013-11-11

Pressley assumes the reader knows the main results of multivariate calculus and concentrates on the theory of the study of surfaces. Used for courses on surface geometry, it includes interesting and in-depth examples and goes into the subject in great detail and vigour. The book will cover three-dimensional Euclidean space only, and takes the whole book to cover the material and treat it as a subject in its own right.

Differential Geometry of Curves and Surfaces - Victor Andreievich Toponogov 2006-09-10

Central topics covered include curves, surfaces, geodesics, intrinsic geometry, and the Alexandrov global angle comparison theorem. Many nontrivial and original problems (some with hints and solutions). Standard theoretical material is combined with more difficult theorems and complex problems, while maintaining a clear distinction between the two levels.

Elementary Differential Geometry - A.N. Pressley 2010-03-10

Elementary Differential Geometry presents the main results in the differential geometry of curves and surfaces suitable for a first course on the subject. Prerequisites are kept to an absolute minimum - nothing beyond first courses in linear algebra and multivariable calculus - and the most direct and straightforward approach is used throughout. New features of this revised and expanded second edition include: a chapter on non-Euclidean geometry, a subject that is of great importance in the history of mathematics and crucial in many modern developments. The main results can be reached easily and quickly by making use of the

results and techniques developed earlier in the book. Coverage of topics such as: parallel transport and its applications; map colouring; holonomy and Gaussian curvature. Around 200 additional exercises, and a full solutions manual for instructors, available via www.springer.com

Visual Differential Geometry and Forms - Tristan Needham 2021-07-13

An inviting, intuitive, and visual exploration of differential geometry and forms. *Visual Differential Geometry and Forms* fulfills two principal goals. In the first four acts, Tristan Needham puts the geometry back into differential geometry. Using 235 hand-drawn diagrams, Needham deploys Newton's geometrical methods to provide geometrical explanations of the classical results. In the fifth act, he offers the first undergraduate introduction to differential forms that treats advanced topics in an intuitive and geometrical manner. Unique features of the first four acts include: four distinct geometrical proofs of the fundamentally important Global Gauss-Bonnet theorem, providing a stunning link between local geometry and global topology; a simple, geometrical proof of Gauss's famous Theorema Egregium; a complete geometrical treatment of the Riemann curvature tensor of an n -manifold; and a detailed geometrical treatment of Einstein's field equation, describing gravity as curved spacetime (General Relativity), together with its implications for gravitational waves, black holes, and cosmology. The final act elucidates such topics as the unification of all the integral theorems of vector calculus; the elegant reformulation of Maxwell's equations of electromagnetism in terms of 2-forms; de Rham cohomology; differential geometry via Cartan's method of moving frames; and the calculation of the Riemann tensor using curvature 2-forms. Six of the seven chapters of Act V can be read completely independently from the rest of the book. Requiring only basic calculus and geometry, *Visual Differential Geometry and Forms* provocatively rethinks the way this important area of mathematics should be considered and taught.

Differential Geometry, Lie Groups, and Symmetric Spaces - Sigurdur Helgason 2001-06-12

A great book ... a necessary item in any mathematical library. --S. S. Chern, University of California
A brilliant book: rigorous, tightly organized, and covering a vast amount of good mathematics. --Barrett O'Neill, University of California
This is obviously a very valuable and well thought-out book on an important subject. --Andre Weil, Institute for Advanced Study
The study of homogeneous spaces provides excellent insights into both differential geometry and Lie groups. In geometry, for instance, general theorems and properties will also hold for homogeneous spaces, and will usually be easier to understand and to prove in this setting. For Lie groups, a significant amount of analysis either begins with or reduces to analysis on homogeneous spaces, frequently on symmetric spaces. For many years and for many mathematicians, Sigurdur Helgason's classic *Differential Geometry, Lie Groups, and Symmetric Spaces* has been--and continues to be--the standard source for this material. Helgason begins with a concise, self-contained introduction to differential geometry. Next is a careful treatment of the foundations of the theory of Lie groups, presented in a manner that since 1962 has served as a model to a number of subsequent authors. This sets the stage for the introduction and study of symmetric spaces, which form the central part of the book. The text concludes with the classification of symmetric spaces by means of the Killing-Cartan classification of simple Lie algebras over \mathbb{C} and Cartan's classification of simple Lie algebras over \mathbb{R} , following a method of Victor Kac. The excellent exposition is supplemented by extensive collections of useful exercises at the end of each chapter. All of the problems have either solutions or substantial hints, found at the back of the book. For this edition, the author has made corrections and added helpful notes and useful references. Sigurdur Helgason was awarded the Steele Prize for Differential Geometry, Lie Groups, and Symmetric Spaces and Groups and Geometric Analysis.

Elements of Differential Geometry - Richard S. Millman 1977

This text is intended for an advanced undergraduate (having taken linear algebra and multivariable calculus). It provides the necessary background for a more abstract course in differential geometry. The inclusion of diagrams is done without sacrificing the rigor of the material. For all readers interested in differential geometry.

A First Course in Differential Geometry - Lyndon Woodward 2019

With detailed explanations and numerous examples, this textbook covers the differential geometry of surfaces in Euclidean space.

Elementary Differential Geometry - Barrett O'Neill 2014-05-12

Elementary Differential Geometry focuses on the elementary account of the geometry of curves and surfaces. The book first offers information on calculus on Euclidean space and frame fields. Topics include structural equations, connection forms, frame fields, covariant derivatives, Frenet formulas, curves, mappings, tangent vectors, and differential forms. The publication then examines Euclidean geometry and calculus on a surface. Discussions focus on topological properties of surfaces, differential forms on a surface, integration of forms, differentiable functions and tangent vectors, congruence of curves, derivative map of an isometry, and Euclidean geometry. The manuscript takes a look at shape operators, geometry of surfaces in E , and Riemannian geometry. Concerns include geometric surfaces, covariant derivative, curvature and conjugate points, Gauss-Bonnet theorem, fundamental equations, global theorems, isometries and local isometries, orthogonal coordinates, and integration and orientation. The text is a valuable reference for students interested in elementary differential geometry.

Differential Geometry of Curves and Surfaces - Thomas F. Banchoff 2010-03-01

Students and professors of an undergraduate course in differential geometry will appreciate the clear exposition and comprehensive exercises in this book that focuses on the geometric properties of curves and surfaces, one- and two-dimensional objects in Euclidean space. The problems generally relate to questions of local properties (the properties

Lectures on Differential Geometry - Richard M. Schoen 1994

Differential Geometry - Loring W. Tu 2017-06-01

This text presents a graduate-level introduction to differential geometry for mathematics and physics students. The exposition follows the historical development of the concepts of connection and curvature with the goal of explaining the Chern-Weil theory of characteristic classes on a principal bundle. Along the way we encounter some of the high points in the history of differential geometry, for example, Gauss' Theorema Egregium and the Gauss-Bonnet theorem. Exercises throughout the book test the reader's understanding of the material and sometimes illustrate extensions of the theory. Initially, the prerequisites for the reader include a passing familiarity with manifolds. After the first chapter, it becomes necessary to understand and manipulate differential forms. A knowledge of de Rham cohomology is required for the last third of the text. Prerequisite material is contained in author's text *An Introduction to Manifolds*, and can be learned in one semester. For the benefit of the reader and to establish common notations, Appendix A recalls the basics of manifold theory. Additionally, in an attempt to make the exposition more self-contained, sections on algebraic constructions such as the tensor product and the exterior power are included. Differential geometry, as its name implies, is the study of geometry using differential calculus. It dates back to Newton and Leibniz in the seventeenth century, but it was not until the nineteenth century, with the work of Gauss on surfaces and Riemann on the curvature tensor, that differential geometry flourished and its modern foundation was laid. Over the past one hundred years, differential geometry has proven indispensable to an understanding of the physical world, in Einstein's general theory of relativity, in the theory of gravitation, in gauge theory, and now in string theory. Differential geometry is also useful in topology, several complex variables, algebraic geometry, complex manifolds, and dynamical systems, among other fields. The field has even found applications to group theory as in Gromov's work and to probability theory as in Diaconis's work. It is not too far-fetched to argue that differential geometry should be in every mathematician's arsenal.

Manifolds, Tensors and Forms - Paul Renteln 2014

Comprehensive treatment of the essentials of modern differential geometry and topology for graduate students in mathematics and the physical sciences.

Differential Equations - Paul Blanchard 2012-07-25

Incorporating an innovative modeling approach, this book for a one-semester differential equations course emphasizes conceptual understanding to help users relate information taught in the classroom to real-world experiences. Certain models reappear throughout the book as running themes to synthesize different concepts from multiple angles, and a dynamical systems focus emphasizes predicting the long-term behavior of these recurring models. Users will discover how to identify and harness the mathematics they will use in their careers, and apply it effectively outside the classroom. Important Notice: Media content

referenced within the product description or the product text may not be available in the ebook version.

Applied Differential Geometry - William L. Burke 1985-05-31

This is a self-contained introductory textbook on the calculus of differential forms and modern differential geometry. The intended audience is physicists, so the author emphasises applications and geometrical reasoning in order to give results and concepts a precise but intuitive meaning without getting bogged down in analysis. The large number of diagrams helps elucidate the fundamental ideas. Mathematical topics covered include differentiable manifolds, differential forms and twisted forms, the Hodge star operator, exterior differential systems and symplectic geometry. All of the mathematics is motivated and illustrated by useful physical examples.

Matrix Groups for Undergraduates - Kristopher Tapp 2016-04-07

Matrix groups touch an enormous spectrum of the mathematical arena. This textbook brings them into the undergraduate curriculum. It makes an excellent one-semester course for students familiar with linear and abstract algebra and prepares them for a graduate course on Lie groups. *Matrix Groups for Undergraduates* is concrete and example-driven, with geometric motivation and rigorous proofs. The story begins and ends with the rotations of a globe. In between, the author combines rigor and intuition to describe the basic objects of Lie theory: Lie algebras, matrix exponentiation, Lie brackets, maximal tori, homogeneous spaces, and roots. This second edition includes two new chapters that allow for an easier transition to the general theory of Lie groups.

Differential Geometry of Curves and Surfaces - Kristopher Tapp 2016-09-30

This is a textbook on differential geometry well-suited to a variety of courses on this topic. For readers seeking an elementary text, the prerequisites are minimal and include plenty of examples and intermediate steps within proofs, while providing an invitation to more excursive applications and advanced topics. For readers bound for graduate school in math or physics, this is a clear, concise, rigorous development of the topic including the deep global theorems. For the benefit of all readers, the author employs various techniques to render the difficult abstract ideas herein more understandable and engaging. Over 300 color illustrations bring the mathematics to life, instantly clarifying concepts in ways that grayscale could not. Green-boxed definitions and purple-boxed theorems help to visually organize the mathematical content. Color is even used within the text to highlight logical relationships. Applications abound! The study of conformal and equiareal functions is grounded in its application to cartography. Evolutes, involutes and cycloids are introduced through Christiaan Huygens' fascinating story: in attempting to solve the famous longitude problem with a mathematically-improved pendulum clock, he invented mathematics that would later be applied to optics and gears. Clairaut's Theorem is presented as a conservation law for angular momentum. Green's Theorem makes possible a drafting tool called a planimeter. Foucault's Pendulum helps one visualize a parallel vector field along a latitude of the earth. Even better, a south-pointing chariot helps one visualize a parallel vector field along any curve in any surface. In truth, the most profound application of differential geometry is to modern physics, which is beyond the scope of this book. The GPS in any car wouldn't work without general relativity, formalized through the language of differential geometry. Throughout this book, applications, metaphors and visualizations are tools that motivate and clarify the rigorous mathematical content, but never replace it.

Fourier Analysis on Number Fields - Dinakar Ramakrishnan 2013-04-17

A modern approach to number theory through a blending of complementary algebraic and analytic perspectives, emphasising harmonic analysis on topological groups. The main goal is to cover John Tate's visionary thesis, giving virtually all of the necessary analytic details and topological preliminaries -- technical prerequisites that are often foreign to the typical, more algebraically inclined number theorist. While most of the existing treatments of Tate's thesis are somewhat terse and less than complete, the intent here is to be more leisurely, more comprehensive, and more comprehensible. While the choice of objects and methods is naturally guided by specific mathematical goals, the approach is by no means narrow. In fact, the subject matter at hand is germane not only to budding number theorists, but also to students of harmonic analysis or the representation theory of Lie groups. The text addresses students who have taken a year of graduate-level course in algebra, analysis, and topology. Moreover, the work will act as a good reference for working mathematicians interested in any of these fields.

Tensor Analysis and Elementary Differential Geometry for Physicists and Engineers - Hung Nguyen-Schäfer 2016-08-16

This book presents tensors and differential geometry in a comprehensive and approachable manner, providing a bridge from the place where physics and engineering mathematics end, and the place where tensor analysis begins. Among the topics examined are tensor analysis, elementary differential geometry of moving surfaces, and k -differential forms. The book includes numerous examples with solutions and concrete calculations, which guide readers through these complex topics step by step. Mindful of the practical needs of engineers and physicists, book favors simplicity over a more rigorous, formal approach. The book shows readers how to work with tensors and differential geometry and how to apply them to modeling the physical and engineering world. The authors provide chapter-length treatment of topics at the intersection of advanced mathematics, and physics and engineering: • General Basis and Bra-Ket Notation • Tensor Analysis • Elementary Differential Geometry • Differential Forms • Applications of Tensors and Differential Geometry • Tensors and Bra-Ket Notation in Quantum Mechanics The text reviews methods and applications in computational fluid dynamics; continuum mechanics; electrodynamics in special relativity; cosmology in the Minkowski four-dimensional space time; and relativistic and non-relativistic quantum mechanics. Tensor Analysis and Elementary Differential Geometry for Physicists and Engineers benefits research scientists and practicing engineers in a variety of fields, who use tensor analysis and differential geometry in the context of applied physics, and electrical and mechanical engineering. It will also interest graduate students in applied physics and engineering.

First Steps in Differential Geometry - Andrew McInerney 2013-07-09

Differential geometry arguably offers the smoothest transition from the standard university mathematics sequence of the first four semesters in calculus, linear algebra, and differential equations to the higher levels of abstraction and proof encountered at the upper division by mathematics majors. Today it is possible to describe differential geometry as "the study of structures on the tangent space," and this text develops this point of view. This book, unlike other introductory texts in differential geometry, develops the architecture necessary to introduce symplectic and contact geometry alongside its Riemannian cousin. The main goal of this book is to bring the undergraduate student who already has a solid foundation in the standard mathematics curriculum into contact with the beauty of higher mathematics. In particular, the presentation here emphasizes the consequences of a definition and the careful use of examples and constructions in order to explore those consequences.

Geometry of Differential Forms - Shigeyuki Morita 2001

Since the times of Gauss, Riemann, and Poincare, one of the principal goals of the study of manifolds has been to relate local analytic properties of a manifold with its global topological properties. Among the high points on this route are the Gauss-Bonnet formula, the de Rham complex, and the Hodge theorem; these results show, in particular, that the central tool in reaching the main goal of global analysis is the theory of

differential forms. The book by Morita is a comprehensive introduction to differential forms. It begins with a quick introduction to the notion of differentiable manifolds and then develops basic properties of differential forms as well as fundamental results concerning them, such as the de Rham and Frobenius theorems. The second half of the book is devoted to more advanced material, including Laplacians and harmonic forms on manifolds, the concepts of vector bundles and fiber bundles, and the theory of characteristic classes. Among the less traditional topics treated is a detailed description of the Chern-Weil theory. The book can serve as a textbook for undergraduate students and for graduate students in geometry.

Ordinary Differential Equations - Morris Tenenbaum 1985-10-01

Skillfully organized introductory text examines origin of differential equations, then defines basic terms and outlines the general solution of a differential equation. Subsequent sections deal with integrating factors; dilution and accretion problems; linearization of first order systems; Laplace Transforms; Newton's Interpolation Formulas, more.

Differential Geometry of Curves and Surfaces - Manfredo P. do Carmo 2016-12-14

One of the most widely used texts in its field, this volume's clear, well-written exposition is enhanced by many examples and exercises, some with hints and answers. 1976 edition.

Differential Geometry of Curves and Surfaces - Manfredo P. do Carmo 2016-12-14

One of the most widely used texts in its field, this volume introduces the differential geometry of curves and surfaces in both local and global aspects. The presentation departs from the traditional approach with its more extensive use of elementary linear algebra and its emphasis on basic geometrical facts rather than machinery or random details. Many examples and exercises enhance the clear, well-written exposition, along with hints and answers to some of the problems. The treatment begins with a chapter on curves, followed by explorations of regular surfaces, the geometry of the Gauss map, the intrinsic geometry of surfaces, and global differential geometry. Suitable for advanced undergraduates and graduate students of mathematics, this text's prerequisites include an undergraduate course in linear algebra and some familiarity with the calculus of several variables. For this second edition, the author has corrected, revised, and updated the entire volume.

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.

Elementary Analysis - Kenneth A. Ross 2014-01-15