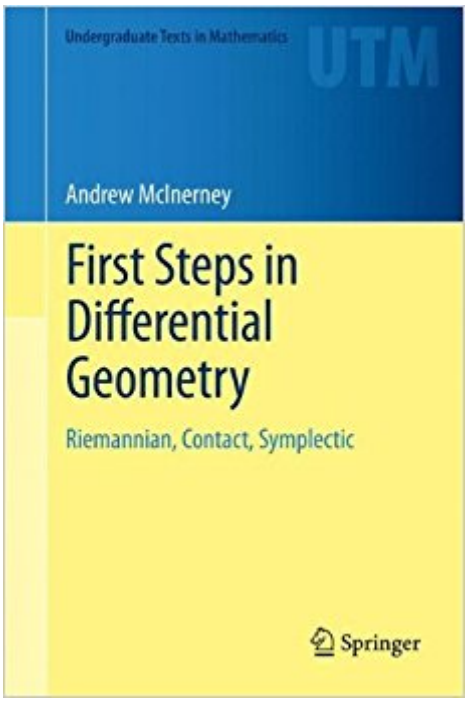
First Steps In Differential Geometry: Riemannian, Contact, Symplectic (Undergraduate Texts In Mathematics)



Synopsis

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.

Book Information

Series: Undergraduate Texts in Mathematics

Hardcover: 410 pages

Publisher: Springer; 2013 edition (July 10, 2013)

Language: English

ISBN-10: 146147731X

ISBN-13: 978-1461477310

Product Dimensions: 6.1 x 0.9 x 9.2 inches

Shipping Weight: 1.6 pounds (View shipping rates and policies)

Average Customer Review: 5.0 out of 5 stars 2 customer reviews

Best Sellers Rank: #549,606 in Books (See Top 100 in Books) #59 inÃ Â Books > Science & Math > Mathematics > Geometry & Topology > Differential Geometry #107 inÃ Â Books > Science & Math > Mathematics > Geometry & Topology > Topology #314 inÃ Â Books > Textbooks > Science & Mathematics > Mathematics > Geometry

Customer Reviews

From the book reviews:Ã¢â ¬Å“This books presents an alternative route, aiming to provide the student with an introduction not only to Riemannian geometry, but also to contact and symplectic geometry. Ã¢â ¬Â¦ the book is leavened with an excellent collection of illustrative examples, and a wealth of exercises on which students can hone their skills. Each chapter also includes a short guide to further reading on the topic with a helpful brief commentary on the suggestions.Ã¢â ¬Â•

(Robert J. Low, Mathematical Reviews, May, 2014)Ã¢â ¬Å“This book is a distinctive and ambitious effort to bring modern notions of differential geometry to undergraduates. Ã¢â ¬Â¦ McInerneyÃ¢â ¬â„¢s writing is well constructed and very clear Ã¢â ¬Â¦ . Summing Up: Recommended. Upper-division undergraduates and graduate students.Ã¢â ¬Â• (S. J. Colley, Choice, Vol. 51 (8), April, 2014)Ã¢â ¬Å“The author does make a considerable effort to keep things as accessible as possible, with fairly detailed explanations, extensive motivational discussions and homework problems Ã¢â ¬Â¦ . this book provides a different way of looking at the subject of differential geometry, one that is more modern and sophisticated than is provided by many of the standard undergraduate texts and which will certainly do a good job of preparing the student for additional work in this area down the road.Ã¢â ¬Â• (Mark Hunacek, MAA Reviews, January, 2014)Ã¢â ¬Å“This text provides an early and broad view of geometry to mathematical students Ã¢â ¬Â¦ . Altogether, this book is easy to read because there are plenty of figures, examples and exercises which make it intuitive and perfect for undergraduate students.Ã¢â ¬Â• (Teresa Arias-Marco, zbMATH, Vol. 1283, 2014)

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.

I think this book is very good for beginners, principally I am interested in contact geometry and Symplectic Geometry and this text is ok for an crash introduction

Whether you’re a professor seeking approaches to teaching these concepts, or a student encountering the foundational concepts, this book is a must have. Elegant, well written, concise and carefully organized, who could imagine a book in advanced mathematical concepts would be such a

joy to encounter?

First Steps in Differential Geometry: Riemannian, Contact, Symplectic (Undergraduate Texts in Mathematics) Riemannian Holonomy Groups and Calibrated Geometry (Oxford Graduate Texts in Mathematics) No Contact Rule: 17 Best Tips on How To Get Your Ex Back + Free Gift Inside (The no contact rule - No contact - Dating) Introduction to Partial Differential Equations (Undergraduate Texts in Mathematics) Proofs and Fundamentals: A First Course in Abstract Mathematics (Undergraduate Texts in Mathematics) Ideals, Varieties, and Algorithms: An Introduction to Computational Algebraic Geometry and Commutative Algebra (Undergraduate Texts in Mathematics) Geometry: A Metric Approach with Models (Undergraduate Texts in Mathematics) Transformation Geometry: An Introduction to Symmetry (Undergraduate Texts in Mathematics) Eigenvalues in Riemannian Geometry (Pure and Applied Mathematics) Differential Geometry: Connections, Curvature, and Characteristic Classes (Graduate Texts in Mathematics) Mathematics and Technology (Springer Undergraduate Texts in Mathematics and Technology) The Mathematics of Nonlinear Programming (Undergraduate Texts in Mathematics) The Art of Proof: Basic Training for Deeper Mathematics (Undergraduate Texts in Mathematics) Linear Algebra: An Introduction to Abstract Mathematics (Undergraduate Texts in Mathematics) Discrete Mathematics: Elementary and Beyond (Undergraduate Texts in Mathematics) Mathematics and Its History (Undergraduate Texts in Mathematics) Reading, Writing, and Proving: A Closer Look at Mathematics (Undergraduate Texts in Mathematics) The Mathematics of Medical Imaging: A BeginnerÃ¢â ¬â„¢s Guide (Springer Undergraduate Texts in Mathematics and Technology) Differential Equations and Their Applications: An Introduction to Applied Mathematics (Texts in Applied Mathematics) (v. 11) Modern Geometry Ã¢â ¬â ¢ Methods and Applications: Part I: The Geometry of Surfaces, Transformation Groups, and Fields (Graduate Texts in Mathematics) (Pt. 1)