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NEW RELEASES

A Standard Model Workbook

Thomas A. Moore, Pomona College

584 pages

Subjects: Physics

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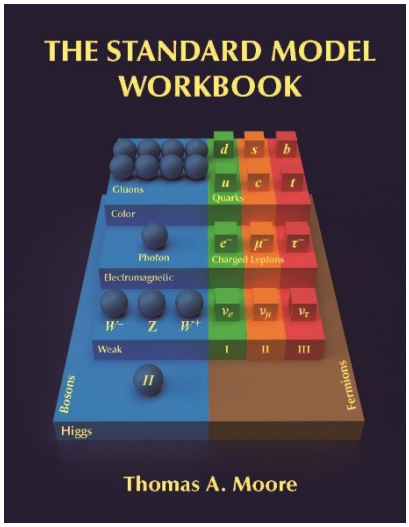


“Moore blends clear and efficient prose with well-chosen exercises that are an essential part of the exposition, helping students build both fluency with the concepts and facility with the calculations. This workbook guides the student from first steps to the sort of mastery through computation that is prized by working physicists.”
-William Loinaz, Amherst College

"I found this textbook to be a delightful overview of particle physics for an undergraduate course. Moore clearly understands his student audience and their capabilities/limitations and tunes the pacing and parceling of the material accordingly."
-Jonas Mureika, Loyola Marymount University

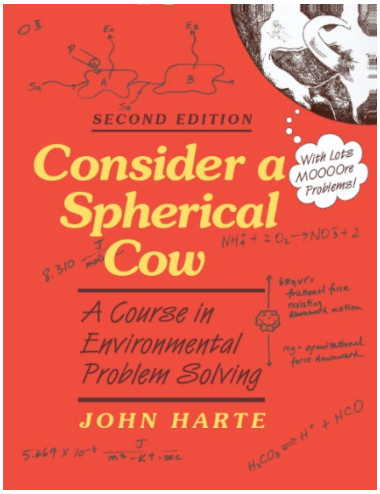
A Standard Model Workbook provides upper-level undergraduates a one-semester introduction to the Standard Model of particle physics. Its classroom-tested workbook design offers multiple paths through the material, consisting of short chapters that provide an overview of a topic followed by opportunities for students to work out the details for themselves, concluding with homework problems to further develop students’ understanding of the concepts. This allows students to truly own the materials by working through it and allows instructors to construct an active, student-centered class.

Topics include a review of special relativity and quantum mechanics; the Lagrangian mechanics of fields; some basic quantum field theory; Feynman diagrams; solutions to the Dirac equation; the U(1), SU(2), and SU(3) symmetries and their implications for electrodynamics; the electroweak theory and quantum chromodynamics; renormalization; the Higgs mechanism; fermion and neutrino masses; experimental tests and applications of the Standard Model; and a look at possibilities beyond the Standard Model. The book is designed to offer multiple paths through the material so that instructors can choose what to emphasize. A detailed Instructor’s Manual is available for this text.

Softcover ISBN: 978-1-940380-17-9
eISBN: 978-1-940380-18-6

NEW RELEASES

Consider a Spherical Cow: A Course in Environmental Problem Solving, 2nd Edition



John Harte, University of California, Berkeley

378 pages

Subjects: Chemistry, Earth & Environmental Sciences, Environmental Chemistry

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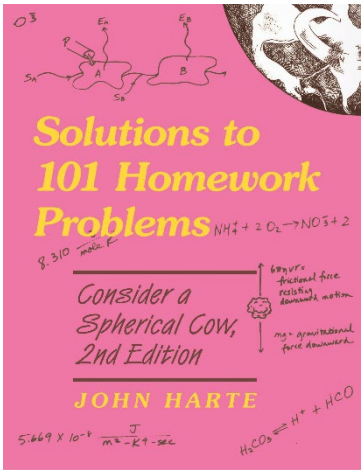
This new edition of *Consider a Spherical Cow* teaches basic mathematical modeling skills that are widely applicable to a huge range of environmental problems facing the world today. Organized both by modeling tools and environmental topics, this innovative book includes 56 posed problems and worked-out solutions. Readers will find introductions to topics, extensive pedagogic material explaining how to use the relevant modeling tools, and opportunities to think more deeply about or confirm steps in the provided solutions. This new edition includes 101 new quantitative homework exercises, an appendix compendium of updated environmental data, a glossary, and a bibliography, plus entirely new sections on probability, toxics, radiation and radioactivity, and epidemics.

With wide topical coverage, Harte teaches the math step by step in the context of actual posed environmental problems, emphasizes limitations and strengths of models, and describes practical applications to real problems and situations. Along with the many worked-out problems, discussion questions and quantitative problems are provided as exercises for the reader. The book emphasizes creative applications of math to environmental science, not plug-in problems.

Softcover ISBN: 978-1-940380-22-3
eISBN: 978-1-940380-23-0

101 Homework Problems: Consider a Spherical Cow, 2nd Edition



John Harte, University of California, Berkeley

103 pages

Licenses: World Rights Available

This Solutions Manual accompanies John Harte's ***Consider a Spherical Cow, 2nd Edition***, restating the 101 homework problems and including detailed solutions. Written to develop students' high level of creative problem-solving skills, the homework exercises cover the tools and topics developed in the main text. These all-original problems, about half of which are open-ended, have been thoroughly road tested in Harte's courses over the years.

Softcover ISBN: 978-1-940380-44-5
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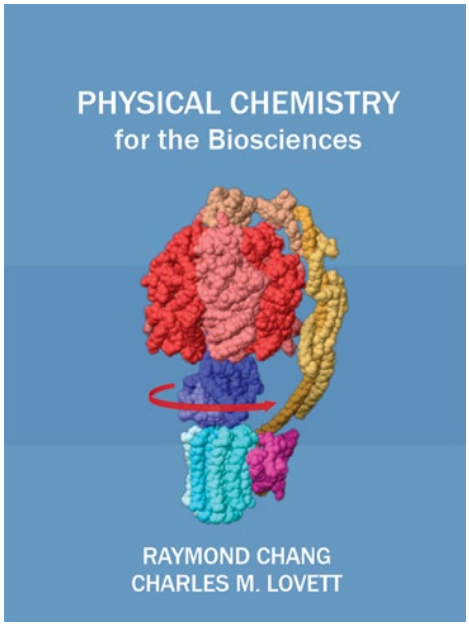
COMING SOON

Physical Chemistry for the Biosciences, 2nd Edition



Raymond Chang and Chip Lovett, Williams College

Subjects: Chemistry, Physical Chemistry

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This best-selling text is back in an updated second edition for the one-semester physical chemistry course. Carefully crafted to match the needs and interests of students majoring in the life sciences, *Physical Chemistry for the Biosciences* has been revised to provide students with a sophisticated appreciation for physical chemistry as the basis for a variety of interesting biological phenomena. Major changes to the new edition include:

- Discussion of intermolecular forces in chapter
- Detailed discussion of protein and nucleic acid structure, providing students with the background needed to fully understand the biological applications of thermodynamics and kinetics described later in the book
- Expanded and updated descriptions of biological examples, such as protein misfolding diseases, photosynthesis, and vision

Hardcover ISBN: 978-1-940380-39-1
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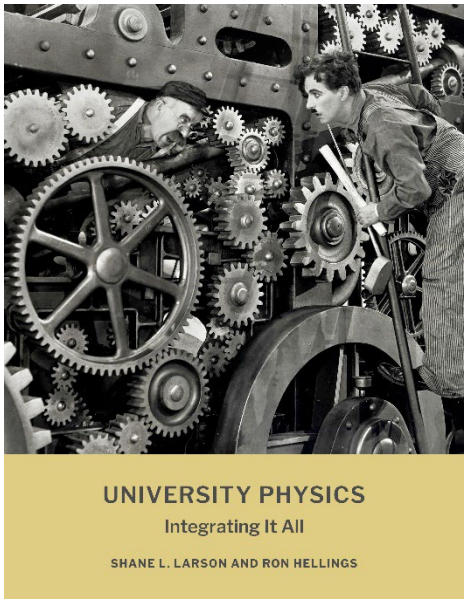
University Physics: Integrating It All



Shane L. Larson, Northwestern University

Ron Hellings, Montana State University

Subjects: Physics

Licenses: World Rights Available

This refreshing new calculus-based textbook answers a demand from instructors for comprehensive coverage of introductory physics in a clearer, shorter, more engaging and less expensive text. *University Physics* provides hundreds of worked examples and chapter-ending problems that cover the fundamentals traditional to this course while developing a clear understanding of how the mathematical frameworks learned in calculus connect to and take on physical meaning in their applications to physics. Optional introductions to topics that students are not often exposed to in introductory courses make this new text a brilliant primer for students who are eager to know where their newly launched physics careers will be going.

Hardcover ISBN: 978-1-940380-19-3
eISBN: 978-1-940380-20-9

FUTURE TITLES

Molecular Driving Forces, 3rd Edition

Ken Dill, Stony Brook University
Sarina Bromberg
Gábor Balázsi, Stony Brook University

Subjects: Chemistry

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Softcover ISBN: 978-1-940380-37-7
eISBN: 978-1-940380-38-4

Techniques and Experiments in Organic Chemistry, 7th Edition

Addison Ault, Cornell College
James Hanson, Seton Hall University

Subjects: Chemistry

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Molecular Kinetics and Dynamics

Joshua Schrier, Fordham University

Subjects: Chemistry, Physical Chemistry

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Christopher Johnson, Stony Brook University
Benjamin Lear, Pennsylvania State University

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Kinetics and Dynamics of Atoms and Molecules

John E. Straub, Boston University

Subjects: Chemistry, Physical Chemistry

Licenses: World Rights Available

Softcover ISBN: 978-1-940380-46-9
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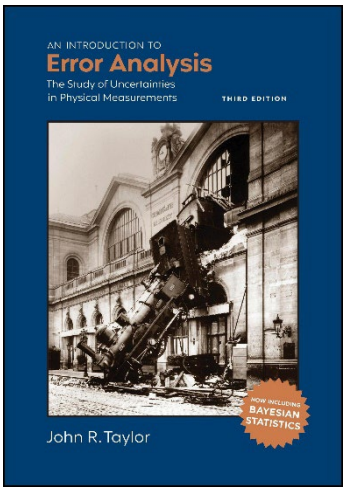
BEST-SELLING BACKLIST

An Introduction to Error Analysis: The Study of Uncertainties in Physical Measurements, 3rd Edition



John R. Taylor, University of Colorado

371 pages

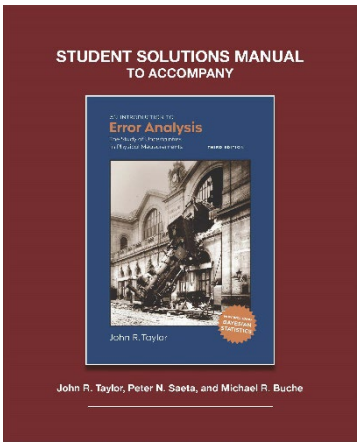
Subjects: Chemistry, Engineering, Physics, Physical Chemistry

Licenses: Italian (Zanichelli), Japanese (Tokyo Kagaku Dozin Co., Ltd)

The third edition of John Taylor's best-selling international hit includes a new chapter on Bayesian statistics and new chapter-ending questions. The new third edition is available in hardcover, softcover, and eBook editions.

Hardcover ISBN: 978-1-940380-14-8
Softcover ISBN: 978-1-940380-08-7
eISBN: 978-1-940380-09-4

Student Solutions Manual to Introduction to Error Analysis, 3rd Edition



John R. Taylor, University of Colorado

Michael Buche, Sandia National Laboratories

Peter Saeta, Harvey Mudd College

Subjects: Chemistry, Engineering, Physical Chemistry, Physics

Licenses: World Rights Available

This Student Solutions Manual accompanies John Taylor's *Introduction to Error Analysis,* 3rd Edition, restating the chapter-ending problems and including detailed solutions, with sometimes more than one solution per problem. Some solutions include the use of spreadsheets and Python, both of which are introduced in tutorials for readers who want to expand their skill sets.

Softcover ISBN: 978-1-940380-30-8
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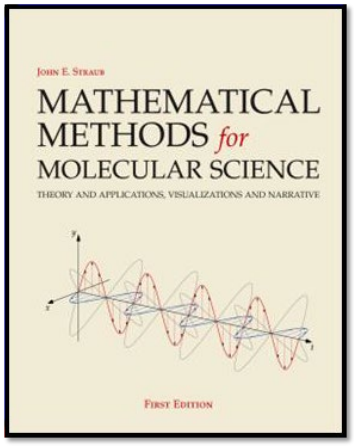
Mathematical Methods for Molecular Science: Theory and Applications, Visualizations and Narrative



John E. Straub, Boston University

Subjects: Chemistry, Engineering, Physical Chemistry

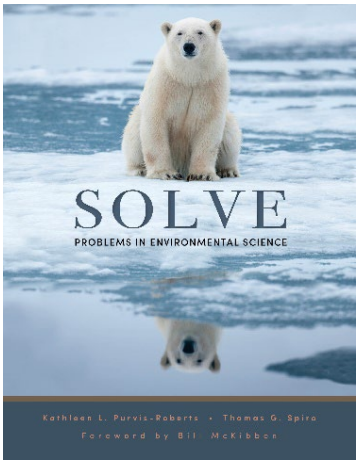
535 pages

Licenses: World Rights Available

This visually oriented new text is designed to bridge the mathematics knowledge gap between what is commonly known after completing a year of introductory calculus and what is required for success in the physical sciences and physical chemistry courses.

Print ISBN: 978-1-940380-13-1
eISBN: 978-1-940380-12-4

SOLVE: Problems in Environmental Science



Kathleen L. Purvis-Roberts, Claremont Colleges
Thomas G. Spiro, University of Washington
Foreword by Bill McKibben

Subjects: Earth & Environmental Science, Environmental Chemistry

460 pages

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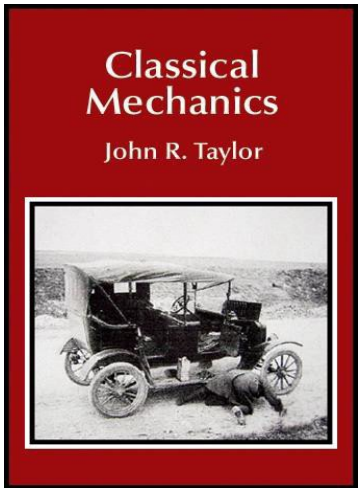
Requiring only algebra and a basic understanding of general chemistry, ***SOLVE*** is full of worked problems followed by practice problems, with brief answers that allow students to check their work.

Print ISBN: 978-1-940380-10-0
eISBN: 978-1-940380-11-7

Classical Mechanics



John R. Taylor, University of Colorado

Subjects: Engineering, Physics

786 pages

Licenses: German, Polish, Portuguese, French

Adopted by hundreds of colleges and universities in the US and Canada and translated into six languages, Taylor's ***Classical Mechanics*** is a thorough and very readable introduction to a subject that is four hundred years old but as exciting today as ever.

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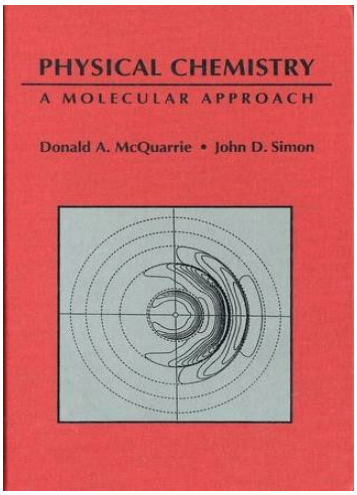
Physical Chemistry: A Molecular Approach



Donald A. McQuarrie, University of California, Davis
John D. Simon

Subjects: Physical Chemistry

1360 pages

Licenses: Japanese, Spanish, French, Italian, Polish

As the first modern physical chemistry textbook to cover quantum mechanics before thermodynamics and kinetics, this book, by one of our most brilliant authors, provides a contemporary approach to the study of physical chemistry.

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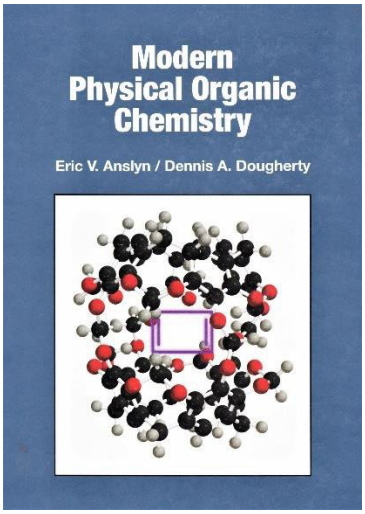
Modern Physical Organic Chemistry



Eric V. Anslyn, University of Texas, Austin
Dennis A. Dougherty, California Institute of Technology

Subjects: Chemistry, Organic Chemistry

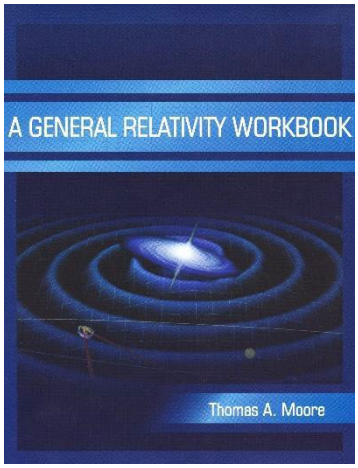
1104 pages

Licenses: Chinese

This coveted tome is the first modern textbook to make explicit the many connections between physical organic chemistry and critical fields such as organometallic chemistry, materials chemistry, bioorganic chemistry, and biochemistry. Written by two distinguished researchers in this field, this is a landmark reference text.

Print ISBN: 978-1-891389-31-3
eISBN: 978-1-891389-48-1

General Relativity Workbook



Thomas A. Moore, Pomona College

Subjects: Physics

536 pages

Licenses: French

With more than 350 homework problems, this active-learning approach enables students to develop a more secure mastery of both the physics and the supporting calculus by pushing and guiding students to work through the implications.

Print Book: ISBN 978-1-891389-82-5
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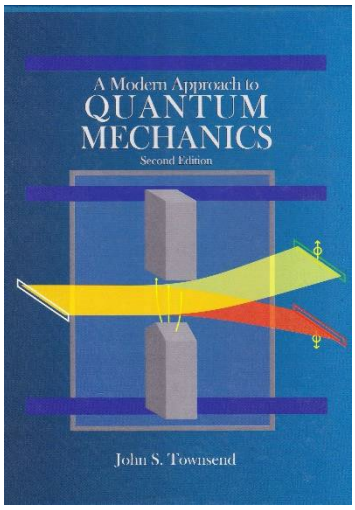
A Modern Approach to Quantum Mechanics, Second Edition



John S. Townsend, Harvey Mudd College
Subjects: Physics, Engineering
592 Pages
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Using an innovative approach that students find both accessible and exciting, this textbook lays out the foundations of quantum mechanics through the physics of intrinsic spin.

Print Book, ISBN 978-1-891389-78-8
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College Physics: Putting It All Together

Ron Hellings, Montana State University
Jeff Adams, Pennsylvania State University
Greg Francis, Montana State University
Subjects: Physics
640 Pages
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This algebra-based first-year physics textbook is a ground-breaking iconoclast in this market, answering a clear demand from physics instructors for a clearer, shorter, more readable and less expensive introductory textbook.

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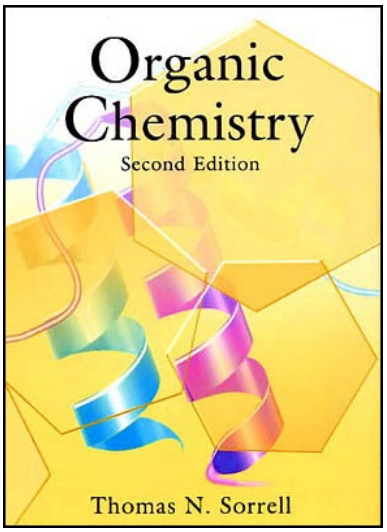

Thomas N. Sorrell, University of North Carolina, Chapel Hill
Subjects: Chemistry, Organic Chemistry
988 pages
Licenses: Japanese

This book's mechanistic approach constructs organic chemistry from the ground up. By focusing on the points of reactivities in organic, this text allows students to approach more and more complex molecules with enhanced understanding. Also noteworthy are the biochemical examples for their variety, substance, and depth.

Print Book, ISBN 978-1-891389-38-2
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