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### Pearson 15th Edition

# Instruction Manual: University Physics with Modern Physics, 15th Edition

By Hugh Young and Roger Freedman

## 1. INTRODUCTION TO THE TEXTBOOK

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This manual provides an overview of the 15th Edition of *University Physics with Modern Physics*, a comprehensive textbook designed for calculus-based physics courses. It outlines the book's structure, key features, and intended use to support student learning and problem-solving development.

The content is developed from extensive data insights from faculty and students, focusing on helping learners identify patterns and connections between different problem types in physics.

## 2. KEY FEATURES AND CONTENT OVERVIEW

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The 15th Edition incorporates several features to enhance understanding and problem-solving skills:

- **Key Concept Statements:** Located at the end of worked examples, these statements identify the main idea used in the solution, helping students recognize underlying concepts and strategies.
- **Key Example Variation Problems:** These problems appear within new Guided Practice sections. They group similar problem types, allowing students to practice recognizing when problems can be solved using similar methods, regardless of specific wording or numerical values.
- **Guided Practice Sections:** These sections include scaffolded problem sets designed to help students identify patterns, make connections between problems, and build confidence.
- **Bridging Problems:** These sections provide stepped-out support to tackle challenging problems, further building problem-solving confidence.

The textbook aims to guide students in developing an understanding of problem-solving approaches rather than simply memorizing equations.

## 3. USING THIS TEXTBOOK EFFECTIVELY

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To maximize learning from *University Physics with Modern Physics* consider the following:

- **Engage with Worked Examples:** Pay close attention to the worked examples and their accompanying Key

Concept statements to grasp the underlying principles.

- **Utilize Guided Practice:** Actively work through the Key Example Variation Problems and Guided Practice sections to develop pattern recognition and problem-solving strategies.
- **Review Bridging Problems:** Use Bridging Problems for additional support on complex topics and to build confidence in tackling diverse challenges.
- **Connect with Mastering Physics:** If available, leverage the integrated problem-solving approach in Mastering Physics for instructional support and just-in-time remediation.

## 4. ADDITIONAL RESOURCES

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The textbook is designed to integrate with digital learning tools:

- **Mastering Physics:** This platform offers personalized learning experiences, instructional support, and remediation. It links end-of-chapter problems directly to the eText for additional guidance.
- **eText:** The eText is fully integrated with Mastering Physics, providing seamless access between homework problems, practice problems, and textbook content.

For information on purchasing Mastering Physics or the eText, consult your instructor or Pearson representative.

## 5. PRODUCT SPECIFICATIONS

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| Attribute        | Detail                     |
|------------------|----------------------------|
| Publisher        | Pearson                    |
| Publication Date | July 6, 2019               |
| Edition          | 15th                       |
| Language         | English                    |
| Print Length     | 1608 pages                 |
| ISBN-10          | 0135159555                 |
| ISBN-13          | 978-0135159552             |
| Item Weight      | 7.1 pounds                 |
| Dimensions       | 9.25 x 2.45 x 11.13 inches |

## 6. AUTHORS AND PUBLISHER INFORMATION

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### About the Authors:

**Hugh D. Young (1930-2013):** Emeritus Professor of Physics at Carnegie Mellon University. Dr. Young dedicated his career to undergraduate education, co-authoring several well-known introductory physics textbooks. He earned his Ph.D. in fundamental particle theory and was known for his engaging teaching style and commitment to students.

**Roger A. Freedman:** Lecturer in Physics at the University of California, Santa Barbara. Dr. Freedman holds a Ph.D. in nuclear theory from Stanford University. His research includes nuclear physics, elementary particle physics, and laser physics. He actively works to make physics lectures more interactive.

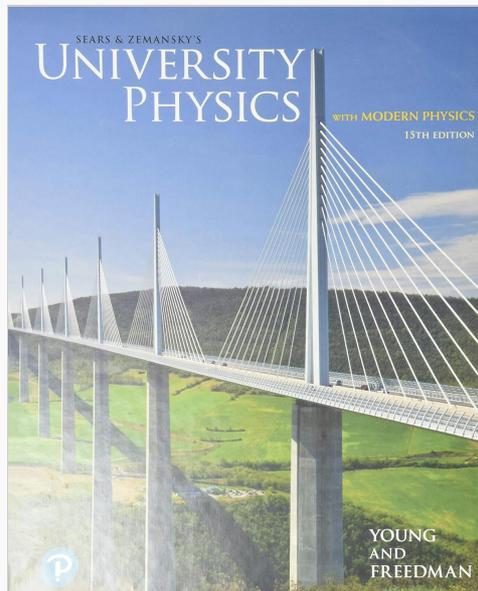
**Lewis Ford:** Professor of Physics at Texas A&M University. Dr. Ford specializes in theoretical atomic physics, particularly

atomic collisions. He has taught a variety of undergraduate and graduate courses at Texas A&M since 1973.

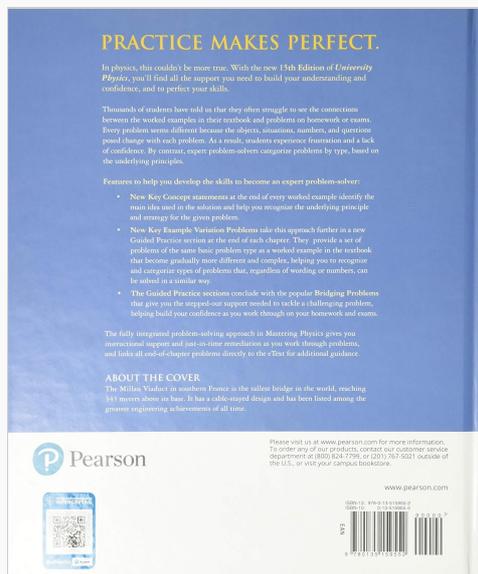
## About the Publisher:

**Pearson:** A leading learning company that partners with educators and institutions to improve results for learners. Pearson provides educational content, assessments, and digital services to millions of students worldwide.

## 7. PRODUCT IMAGES

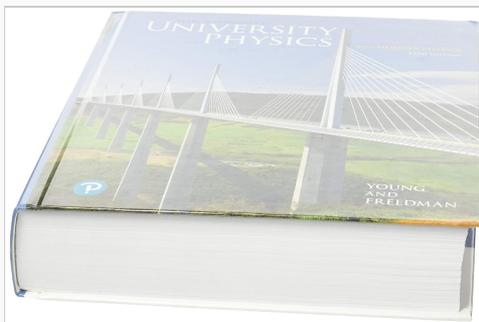


Front cover of the textbook, featuring the title "Sears & Zemansky's University Physics with Modern Physics 15th Edition" and authors Young and Freedman, set against an image of a modern bridge.



Back cover of the textbook, detailing the "Practice Makes Perfect" pedagogical approach, key features, and information about the cover image (Millau Viaduct). Includes publisher logo and ISBNs.



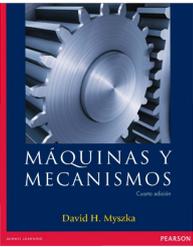


Top-down view of the textbook, showing the thickness and the top edge of the pages.

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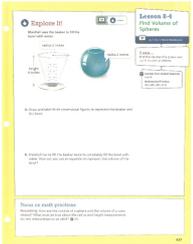
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