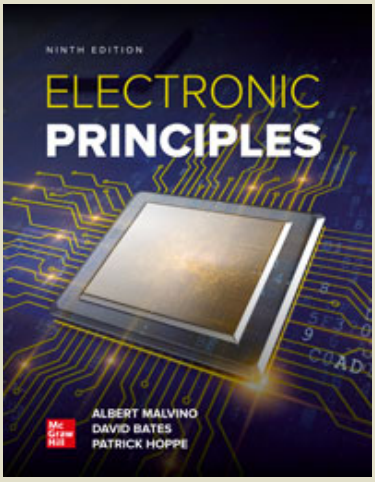
Mc Graw Hill

Because learning changes everything.®

List of Changes



Electronic Principles
9th Edition
Malvino, Bates, and Hoppe

ISBN: 1259852695 / 9781259852695 / © 2021

Electronic Principles continues its tradition as a clearly explained, in-depth introduction to the electronic principles of semiconductor devices, circuits and systems. Written in an easy-to-read conversational style, semiconductor devices and circuits are explored, including practical applications where they are found. Circuit operation and troubleshooting techniques are "brought to life" with Multisim circuit simulation files found on the associated Online Learning Center. *Electronic Principles* subject matter includes updated semiconductor devices and systems including emerging wide bandgap power FETs and an introduction to Industry 4.0. This textbooks builds on the knowledge obtained from Basic Electronics by Mitch Schultz.

SEE LIST OF CHANGES ATTACHED.

Changes to Malvino: Electronic Principles, 9e

New to This Edition:

- **New Chap. 23, "Industry 4.0,"** introduces the concepts of the fourth industrial revolution. Extensive coverage of sensors and data conversion, with examples linking semiconductor devices and circuits covered in previous chapters, acts as a capstone chapter that ties the whole textbook together.
- **ELECTRONICS Innovators** inserts have been added to the margins in several chapters giving students a sense of the development and significant discoveries in the electronics field.
- **New Sec. 12-12, "Wide Band-Gap (WBG) MOSFETs**," including the material characteristics, structures, and operation of GaN and SiC high electron mobility transistors (HEMTs).
- **Expanded material on Multistage Amplifier Troubleshooting** using signal tracing and split-half troubleshooting techniques.
- Expanded **Good To Know** items present additional and interesting facts about semiconductor devices and applications.
- Increased use of electronic devices photos.
- Listing of correlated lab experiments at the end of each chapter. Much effort has been applied to having the textbook and experiments manual work together as a unified knowledge and performance competency package.
- New Sec. 1-7, "AC Circuit Troubleshooting" with oscilloscope signal-tracing techniques and split-half troubleshooting methods presented. This mirrors new troubleshooting procedures in the associated experiments manual.
- Application Example of a light detection and ranging system (LiDAR) in the optoelectronics section of Chap 5.
- The Multisim primer, which was formerly in Appendix C, has been moved to the associated Online Learning Center (OLC).
- Introduction to silicon carbide (SiC) and gallium nitride (GaN) wide band-gap semiconductors.
- Expanded troubleshooting of Class-AB power amplifiers.