

# List of Changes



## Grob's Basic Electronics 13th Edition

Mitchel Schultz

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*Grob's Basic Electronics* provides thorough, comprehensive coverage of all of the important fundamentals of DC and AC circuit theory. It also covers the most common electronic devices and their applications. The book has an endless number of worked-out examples showing detailed step-by-step solutions. Also, a multiple-choice self-test as well as an abundance of homework problems appear at the end of every chapter in the book. New to the 13th edition is a chapter on "Three-Phase AC Power Systems". Also, additional real-world applications have been added to this edition. The book is written for the beginning student who has no previous knowledge about electricity and electronics. A basic knowledge of algebra and trigonometry is beneficial for those students using this book.

SEE LIST OF CHANGES ATTACHED.

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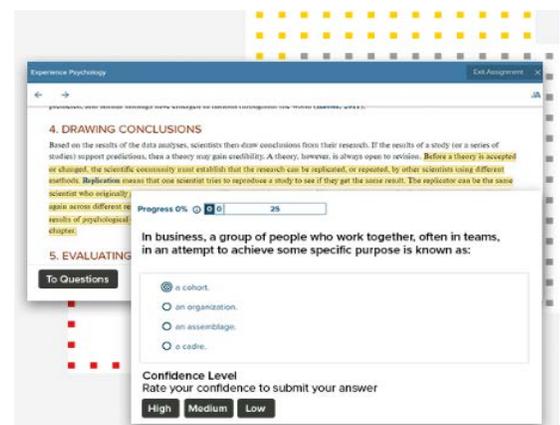
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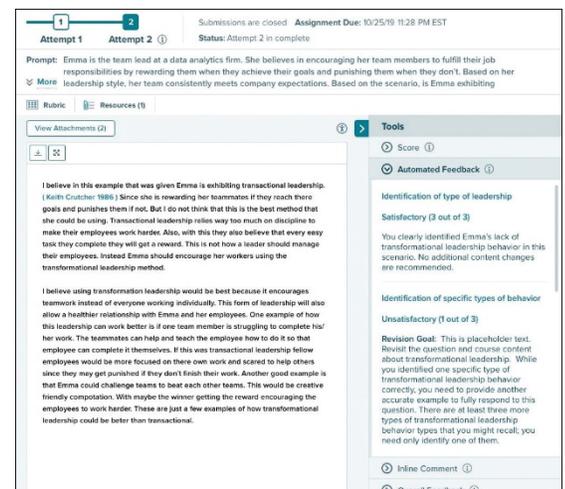
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## Changes to Schultz: Grob's Basic Electronics, 13e

### New to This Edition:

The thirteenth edition continues to provide complete and comprehensive coverage of the basics of electricity and electronics. Several sections throughout the book have been updated to reflect the latest changes in the field of electronics, and new photos and illustrations have been added and/or replaced throughout the book, giving it a fresh, new look. Significant changes are outlined below.

**A new section, “*Electric Shock—Dangers, Precautions and First Aid*,” has been added.** Detailed coverage of the dangers associated with electricity and electronic circuits is provided in this section. A guideline of safe practices for students to follow in a laboratory setting has also been included. This section clearly outlines the first aid and medical treatment procedures a person should follow if assisting someone who has experienced an electrical shock.

**Real-World Applications appearing throughout the book have been increased.** These *Real-World Applications* validate the importance of the topics discussed within a given chapter.

- **Chapter 1, Electricity:** A new section, “*Application in Understanding Alternative and Renewable Energy*,” has been added. This section defines alternative and renewable energy and discusses the basics of two common types, wind and solar energy. It also discusses the benefits and limitations of solar and wind energy.
- **Chapter 2, Resistors:** A new section, “*Application in Understanding Varistors and Surge Protectors*,” has been added. In this section, the characteristics and ratings of **metal-oxide varistors (MOVs)** are thoroughly examined. Furthermore, this section explains how MOVs are used in **surge protectors** to prevent voltage spikes (power surges) from damaging sensitive electronic equipment plugged into the 120 V AC power line.
- **Chapter 8, Analog and Digital Multimeters:** A new section, “*Application in Understanding Clamp-On Ammeters*,” has also been added. In this section, the **controls, keys, and features** of a typical clamp-on ammeter are discussed. Also discussed is the technique for using **an AC line-splitter** to measure the AC current in a power cord without splitting the conductors and/or breaking open the circuit.
- **Chapter 15, Alternating Voltage and Current:** New information on ground-fault circuit interrupters (GFCIs) has been added to the section “*Application in Understanding the 120-V Duplex Receptacle*.” The basic operation, methods of testing, and safety benefits of GFCIs are thoroughly covered.

**A new chapter, “*Three Phase AC Power Systems*,”** has been added. This chapter provides in-depth coverage of both wye (Y)- and delta ( $\Delta$ )-connected three-phase AC generators. In this chapter, the relationship between the phase voltages and line voltages as well as the phase currents and line currents are thoroughly explained for a typical three-phase AC circuit. Also included are the four possible source/load configurations in three-phase AC power systems. The voltage, current, and power calculations for these configurations are thoroughly covered in this chapter. And finally, the advantages of using three-phase AC power versus single-phase AC power are explained in detail.

## Changes to Schultz: Grob's Basic Electronics, 13e

New appendix covering electrostatic discharge, abbreviated ESD. “**Appendix G—Electrostatic Discharge (ESD)**” provides detailed coverage of the causes of ESD as well as its damaging effects. Most importantly, this appendix provides detailed information on how to prevent the build-up of ESD and in turn how to prevent ESD from damaging sensitive electronic components and assemblies.

### Other Significant Changes:

- **Chapter 1, Electricity:** A small section has been added regarding the magnetic field surrounding a current-carrying conductor.
- **Chapter 11, Conductors and Insulators:** A new section has been added on fuse ratings.
- **Chapter 33, Thyristors:** Several additions and/or clarifications were made regarding DIACs, silicon control rectifiers, and TRIACs.
- **Appendix A—Electrical Symbols and Abbreviations,** has also been expanded to provide a more comprehensive list of electrical and electronic symbols.



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