



**Polk County Amateur Radio Association**  
**2010 General Class Study Guide**  
**Lessons 5 thru 8**  
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Week 2 - January 23rd - Lessons 5 - 8

Lesson 5 - "Basic Components"

- Chapter 4, pp 4-7 to 4-13
- What are temperature coefficients and how do they relate to resistors? Page 4-9
- Why is it not a good idea to use a wire-wound resistor in a resonant circuit? Page 4-9
- Can you explain what a thermistor is? Page 4-9
- Be able to identify the schematic symbol for a resistor. Page 4-10
- Explain the three significant benefits of a toroid. Page 4-12
- Study mutual inductance and properties of inductors? Pages 4-10 thru 4-12
- Understand what “inter-turn” capacitance in an inductor. Page 4-11
- Where are large inductors, filter chokes, used? Page 4-11
- Electrolytic capacitors are often used as filters. Page 4-13
- Cheap? Just less expensive than other capacitors; ceramics. Page 4-13
- What are specific issues using capacitors at VHF and UHF? Page 4-13
- Blocking, bypass, filter, suppressor and tuning are all uses for capacitors. Page 4-13
- Be able to identify the schematic symbol for capacitors. Page 4-12

Lesson 6 - "Components in Series and Parallel"

- Chapter 4, pp 4-13 to 4-15
- Gustav Kirchhoff discovered how current flows in a circuit, take a look. Page 4-14
- How do resistors, inductors and capacitors add in series and parallel? Page 4-14

Lesson 7 - "Peak-to-Peak, RMS Voltage, and Power"

- Chapter 4, pp 4-3 to 4-7
- Putting what we learned in Lesson 4 to work
- Practical examples using an oscilloscope, Peak and Average reading watt meter, transmitter and dummy load
- Understanding why RMS is used in Ohm’s Law and the Power Circle

Lesson 8 - "Transformers and Impedance"

- Chapter 4, pp 4-16 to 4-17
- Putting mutual inductance to work in a transformer. Page 4-16
- A transformer has a primary and secondary winding, know what they are. Page 4-16
- What is a “magnetizing” current? Page 4-17
- Explain  $E_P$ ,  $E_S$ ,  $N_P$  and  $N_S$ . Pages 4-16 thru 4-17
- Know the schematic symbol for a transformer. Page 4-11