Reading: Masters
1.2 The battle between Edison (DC) and Westinghouse (AC)
1.3 The Regulatory Side of Electric Utilities
1.3.1 Public Utility Holding Company Act (PUHCA) of 1935
1.3.2 Public Utility Regulatory Policy Act of 1978
1.3.5 The Emergence of Competitive Markets
1.4.2 Balancing Supply and Demand
1.4.3 Grid Stability
Sections 5.9 and 6.1 – 6.3.2

Problems:
Masters: 5.13, 6.1

Additional Problems:
Use the logic used to develop buck and boost DC-DC converters in class to develop duty cycle relationship for the buck-boost converter shown in Figure 5.52.

Additional questions to focus your reading:
1. T. Edison and G. Westinghouse advocated AC and DC power systems respectively. Outline their reasoning (pros and cons for each). Why did AC become the standard.
2. What was Samuel Insull’s electric power industry insight and how did it lead to public utility commissions?
3. What led to the PUHCA of 1935 and what was the Act’s aim?
4. What led to the PURPA of 1978? What were the Act’s two key provisions? How did the Act impact the renewable energy industry?
5. What was the main thrust common to PURPA and EPAct?
6. Outline the concept of balancing energy supply and demand. Describe normal load fluctuations and the affect that energy imbalances have on system frequency.
7. Explain the roles that "must run", "load-following","peakers", and "renewable" power plants have in the power system. Give examples of each. What role does "demand response" play?
8. Describe how grid instabilities occur.