UNIT 4: Exponential and Logarithmic Functions

Objectives: Upon completion of the unit, students will be able to:

- Sketch a graph of an exponential growth, exponential decay, logarithmic and natural logarithm functions
- Solve and set up an application problem involving exponential and logarithmic functions
- Covert from logarithmic to exponential and vice versa
- Evaluate logarithms without a calculator
- Use properties of logarithms to simplify (condense) or expand an expression
- Use Change of Base formula to calculate logs other than common logs or natural logs
- Solve exponential equations and logarithmic equations
- Determine domain and range of logarithmic functions and exponential functions

Video Lectures	Video Examples	Section from Text (WebAssign)
1a. Graphing Exponential Functions 1b. Compound/Continuous Interest 1c. Continuous Interest	1a. Characteristics of different exponential functions	4.1, 4.2
3a. Introduction to Logarithms 3b. Evaluate logs without a calculator! 3c. Evaluate common log on calculator then evaluate what that means exponentially 3d. Find the domain of logarithms	3a. Convert exponential to logarithmic 3b. Convert logarithmic to exponential 3c. Convert exponential (e) to natural log 3d. Match a graph with exponentials or logs	4.3
4a. Properties of Logarithms 4b. Evaluate log expressions using properties 4c. Logarithm review (little bit of everything)	4a. Expand a logarithm 4b. Combine logarithm into one term 4c. Change of Base formula	4.4
5a. Solve the exponential equation (same base) 5b. Solve the exponential equation (not same base)	5a. Solve exponential equations (same bases) 5b. Use graph to **CHECK** solution of exponential equation 5c. Solve exponential equations using logs 5d. Solve multi step exponential equation using logs 5e. Solve compound interest equation (and write it)	4.5
6a. Exponential decay (part I and part II) 6b. Newton's Law of Cooling	6a. Exponential Decay example 6b. Half Life 6c. Double time 6d. Exponential Function application	4.6