

## Exam III Topics:

- **All Topics:**

- Definitions and Examples
- Conceptual Ideas

- **Significant Figures:**

- Rules
- Use in Calculations (for topics below)

- **Population Growth Models:**

- Basic Growth Model:  $P = P_0(1 + r)^t$
- Logistic Growth Model:  $G = P' = rP_0(1 - \frac{P_0}{M})$
- **Variables:**
  - $P$  = population
  - $P_0$  = original population
  - $r$  = growth rate (usually annual)
  - $t$  = time (usually in years)
  - $M$  = carrying capacity
  - $G = P' =$  growth of population

- **Non-Renewable Resources:**

- Static Reserve:  $t = \frac{S}{U}$
- Exponential Reserve:  $t = \frac{\ln(1 + \frac{S}{U}r)}{\ln(1+r)}$
- **Variables:**
  - $S$  = supply of a resource
  - $U$  = current annual consumption of a resource
  - $r$  = annual rate of growth of consumption

- **Renewable Resources:**

- Reproduction Curves
- Sustainable Yield

- **Economics of Harvesting:**

- Cost Curves

- **Chaos:**

- Examples

- **Check Digits:**

- UPC and EAN Methods
- Bank Routing Number Method
- Codabar Method
- ISBN Method
- Apply another method if it is given to you