

## **BIOLOGY 30 UNIT D: POPULATION AND COMMUNITY DYNAMICS**

### **AT THE END OF THIS UNIT YOU SHOULD BE ABLE TO:**

- ✓ Apply the Hardy-Weinberg principle and understand what each variable means
- ✓ Describe factors that cause the diversity in the gene pool to change - natural selection, genetic drift, gene flow, nonrandom mating, bottleneck effect, founder effect, migration, mutation
- ✓ Explain predator/prey relationships and producer/consumer relationships
- ✓ Explain the following symbiotic relationships: mutualism, commensalism, parasitism
- ✓ Understand the difference between interspecific and intraspecific competition
- ✓ Explain the role of defence mechanisms in predation and competition (i.e. mimicry, protective coloration, toxins, behavior)
- ✓ Explain the processes of primary and secondary succession
- ✓ Explain the factors that influence population growth: mortality, natality, immigration, emigration
- ✓ Calculate changes in population size
- ✓ Calculate growth rate, per capita growth rate, and population density from given formulas
- ✓ Interpret an S-shaped curve (logistic growth) and a J-shaped curve (exponential growth)
- ✓ Distinguish between open and closed populations
- ✓ Describe the characteristics and reproductive strategies of r-selected and K-selected organisms
- ✓ Perform a risk-benefit analysis for a biological issue
- ✓ Explain how environmental factors affect a population's growth rate (biotic potential vs environmental resistance)