

Biology 2201 - UNIT 4: INTERACTIONS AMONG LIVING THINGS

1. Population Change

describe population growth and explain factors that influence it

- describe how population growth is dependent upon the difference between natality and mortality rates and a balance between emigration and immigration of organisms
- analyze and describe the limiting factors that regulate population size within ecosystems, including competition, environmental quality, disease, parasitism, predation, food, space and stress
- explain the predator-prey cycle
- distinguish between density independent and dependent factors
- explain how biotic potential, environmental resistance and carrying capacity interact in population dynamics
- examine and label the sections of an S-shaped (logistic) and J-shaped (exponential) growth curve
 - (i) lag
 - (ii) exponential
 - (iii) equilibrium
- compare how J & S curves describe the general population growth patterns observed in animal population
- gather and examine information on the limiting factors that work to influence human population growth
- describe the limiting factors within the human population (space, war disease and poverty)

2. Global Resources

evaluate Earth's carrying capacity, considering human population growth and its demands on natural resources

- determine the current growth rate of the human population and the projected growth rate
- investigate the demands that will be placed upon Earth's natural resources by future population growth
- explain how technological developments have raised, and continue to raise, the carrying capacity of Earth
- describe the three phases of demographic transition

propose courses of action on the social issue of global population control, taking into account an array of perspectives, including that of sustainability