Environmental Systems and Societies

*Study Guide for Population Dynamics*

**Terms you should be able to define:**

* Exponential growth
* Geometric growth
* Limiting factor
* Density-dependent limiting factor
* Internal factor
* External factor
* Density-independent limiting factor
* S-curve
* Carrying capacity
* Environmental resistance
* J-curve
* Dieback
* Overshoot
* k-strategist
* r-strategist
* Survivorship curves
* Human carrying capacity
* Immigration
* Emigration
* Crude birth rate
* Crude death rate
* Natural increase rate
* Doubling time
* Total fertility
* Fertility rate
* Human Development Index
* LEDCs
* MEDCs
* Thomas Malthus
* Ester Boserup
* Age-sex pyramids
* Demographic Transition model

The easiest way to be prepared for the test concerning these terms is to make flash cards. First learn what the term means, then learn it by using the definition. There are 31 terms, you should be able to define all of them in under two minutes.

What you should be able to do:

1. You should be able to differentiate between exponential and geometric growth.
2. You should be able to discuss how a limiting factor affects population growth.
3. You should be able to compare and contrast density dependent and density independent limiting factors.
4. You should be able to differentiate between the types of density dependent limiting factors and give examples of each kind.
5. You should be able to label the parts of an s-curve including environmental resistance and explain the factors which lead to the graph’s shape.
6. You should be able to label the parts of a j-curve including overshoots and diebacks and explain the factors which cause the graphs shape.
7. You should be able to discuss the two kinds of reproductive strategists. In this discussion you should be able to explain the main characteristics of each strategy. You should also be able to match the correct growth curve to the appropriate reproductive strategy.
8. You should be able how the human development index is used to measure a country’s well being.
9. You should be able to differentiate between MEDCs and LEDCs this would include listing the major characteristics of each, as well as being able to give examples of each.
10. You should be able to discuss the major factors which affect the population size of *all* organisms.
11. You should be able to calculate the crude birth rate, crude death rate, natural increase rate, doubling time and fertility rate for a country given the raw data.
12. You should be able to explain how a woman’s fertility rate affects a country’s population. You should also be able to differentiate between fertility rate and crude birth rate.
13. You should be able to discuss the contrasting views of Thomas Malthus and Ester Boserup, this discussion should include defining their theories and explaining the limitations of the theories.
14. You should be able to explain the reasons families have large families and what society can do to reduce family size.
15. You should be able to diagram a sex age pyramid. You should also be able to predict what stage of economic development the country is in given the shape of the pyramid.
16. You should be able to explain the stages of development for a demographic transition model and relate those stages to different shaped population pyramids.
17. You should be able to evaluate the limitations of a demographic transition model.
18. You should be able to discuss why they added a fifth stage to the models and what social problems come with an economic situation represented by that stage.

Holy Crap I'm Freaking Out!

I will not ask all of this on the test, but I will formulate questions that combine many of these. If you get overwhelmed you should focus on being able to answer the quiz questions, I would expect that to get you at least a C on the test.

What should I study?

* You should study the flash cards I described earlier.
* You should study your outline, you made from your notes.
* You should re-watch any videos that you don't understand.
* You should look over all lab work.
* You should re-read the 4 articles given to you in class.
* You should take the objectives listed above, turn them into questions and practice writing answers to those questions.
* You should do some of this before we meet again so our review will be helpful.
* You should come to the review with questions.
* You should e-mail me questions as you study.