GEOG 401 Spring 2013 Final Exam Question List

Spatial patterns of climate change

1. Based on observations and projections, in what areas of the Earth are the effects of climate change the strongest? Explain.

Sea level rise

2. Why have islands in the western Pacific experienced more problems related to rising sea level than other parts of the Pacific?

3. What is the range of projected sea level rise by the end of this century? Identify and explain the sources (mechanisms, not locations) of the projected rise, and give the proportions of projected sea level rise derived from each source.

Mitigation vs. adaptation

4. Define the terms “mitigation” and “adaptation” as response strategies for climate change, give a real world example of each, and discuss ways of determining the best strategy or combination of the two strategies.

5. Why is there an issue with the labeling of "climate refugees"?

6. Describe the important challenges being faced by small island nations as climate change continues to intensify.

7. According to guest lecturer John Campbell, for small islands in the Pacific, what are the constraints on adaptation?

Climate-related migration

8. Explain some of the conflicts that may arise from the migration of climate refugees.

9. What is a “Climate refugee?” In what ways are climate refugees considered by the United Nations to be different from or similar to other refugees? What regions will be most likely to produce climate refugees and why?

Biophysical vs. socio-economic impacts

10. What are the biophysical impacts of climate change? How do these biophysical impacts affect our socio-economic system?
Earth System models

11. Define the four types of uncertainty in Earth System models.

12. What are the components of an Earth Systems Model? How are they used to predict climate change?

13. Briefly describe some of the major changes in global climate models from the earliest models in the 1960s through to the latest Earth System Models. What are the most important attributes of Earth System models that set them apart from prior climate models?

14. Explain what reanalysis data sets are and what they are used for.

Risk, hazard, exposure, and vulnerability

15. Give the RISK equation and explain all of the variables. Explain how mitigation and adaptation each address different terms in this equation.

16. Maxine Burkett presented three indices of vulnerability to climate change. Name and briefly describe them.

Climate variability and change in Hawai‘i

17. What are ENSO and PDO cycles? How do they affect climate in Hawaii?

Feedbacks

18. Describe the important carbon cycle feedbacks and explain how they affect the build up of atmospheric CO2 and global warming.

Conveying climate change information to the public

19. Some people accept the scientific evidence of human-induced climate change while others don’t. What influences the way people respond to climate information?

International issues in responding to climate change

20. Discuss the imbalance between the main contributors to CO2 emissions and the communities that will be the most affected by the consequences of increasing CO2 concentrations in the atmosphere.