

Biology 307 – Principles of Ecology

FINAL STUDY GUIDE

(Final Exam is scheduled for Wednesday, May 6, 2009 - 7:50 am to 9:50 am)

GENERAL INFO:

The final format will be similar to the previous two exams already taken this semester

Be sure to go over the practice multiple choice examples from the Student Resource book link online (link also available through the class web site listed in your syllabus):

http://occawlonline.pearsoned.com/bookbind/pubbooks/smith_efb/chapter1/deluxe.html

Use your previous two exams to study material covered broadly. Some of the material from Exams I and II has been repetitive throughout the year. I'll expect you to be able to put things together (synthesize) and draw from multiple subjects when addressing essay questions. Remember to think like an ecologist.

Also, do not ignore the multiple handouts provided in class (particularly during the later part of the semester). Remember the Raunkiaer Life Forms handout and how things went in the second exam. Please try to pay a little more attention to handouts this time around. (Don't worry, I promise you won't have to list Raunkiaer Life Forms ever again).

Remember how much I talked about LTER sites? I expect you to know what an LTER site is, why they matter, and at least be able to name one LTER site, hopefully your own (assignment 4).

MULTIPLE CHOICE:

All multiple choice problems will be taken from the later portion of the class (any material covered after Exam II)

- Landscape Ecology, Ecosystem Productivity, Cycling of Nutrients and Materials, Biogeography, Terrestrial Ecosystems, Aquatic Ecosystems
- Pay close attention to terminology provided in your class notes, particularly terms and topics in red font from your lecture slides available online
- Don't just memorize the online examples, know why the appropriate answer is correct. (Keep in mind, I'll move things around like I did for Exam II)

MATCH:

Revisit the Match portion of Exam I.

Pay close attention to the ecologists that we have covered in class, particularly those who have made significant contributions to the field. Expect a similar MATCH exercise during the final. Might want to look back at the slides from the Introduction and History lecture and look for names that were continuously mentioned throughout the different sections of class.

Most of what we know about Ecology is due to the many scientists that did the work (some of them many many years ago). Let's give them some credit.

ESSAY:

Use your previous two exams to study for essay questions from materials covered in the earlier part of the semester (up to Exam II). Look at your answers carefully and if I added comments to your response, try your best to address them. Look over your notes and consider how to possibly improve your response. Even if you received a perfect score for a particular answer, it wouldn't hurt to find ways to improve them. If you received less than a perfect score, you should definitely look things over some more.

I can guarantee that you will see (and will have to answer) the following essay questions, so there should be no excuse for you to not have a good answer to them:

- Revisit the Functional Responses of Predators question from Exam II (Types I, II, III – remember)
- The Nitrogen Cycle (handout provided). You should know the N cycle front to back and back to front including diagrams, important role players, limitations, and human impacts. Seriously, I want all the bells and whistles here...I wouldn't be telling you this if I didn't think it was important.
- From Exam I: Consider the energy associated with organic molecules in a senescing leaf on a tree in Thompson Woods. Describe all the possible pathways and fates of this energy from the point where the leaf drops from the tree and falls into the ground. I want you to associate this with all the information covered as it relates to energy flow and the carbon cycle (decomposition, primary production, secondary production, material fluxes, internal cycling, etc.) and the relative pathways and transformation. You can get creative here as you have now examined the changing environment from your patch of forest group project.
- From Exam II: Be ready to break down some old fashion Shannon Index calculations. YES, bring your calculators, please! This will be similar to what you did in Exam II and then again a few days later in class. This time I will have you calculate 3 communities. Remember that the highest H' value indicates highest diversity (not the one closest to 1). By now this should be a piece of cake!
- From Exam II: Community assemblages and community structure can be influenced by many biotic and abiotic factors (i.e., inter- and intra-specific species interactions, climate, habitat structure, resource availability, etc.) Provide examples of how specific interactions influence community structure in a (Insert Ecosystem Here). Discuss which factors are density-dependent and which are density-independent. Discuss how these factors could combine to determine population fluctuations within your community. (Note: Don't get stuck on a simple answer related to only Exam II material. You now have more ammunition regarding specific ecosystems and factors affecting communities – you should be able to synthesize).

These 5 questions will be a guaranteed 50 points from your final (about 33% of the total possible score of 150... if my math is right). Let's face it, by final exam time you should be ready to spit these essay answers out in your sleep.

CLOSING REMARKS:

I wish you the best in the final and continued success beyond this class. I had a great time during the semester and enjoyed every minute of it. Do not hesitate to contact me prior to the final with any questions or concerns regarding the class. After the semester ends and you move on, don't hesitate to contact me if you need any information or support that I might be able to provide. Don't be a stranger, I'll be happy to buy you a drink if we ever run into each other in the future, or if you don't drink or are under age, I'll buy you a Dr. Pepper.

Stay mellow,

Checo