Biology 211 Labs, Spring 2015

Principles of Biology I Lab

Required Lab supplies: Exploring Biological Diversity with Introductions to Genetics, Evolution, and Ecology by J. T. Colbert and L. M. Westgate, Fountainhead Publishers, 2014.
Biological Science, 5th ed. by Freeman et.al. 2014 (E-version).
Optional
Van DeGraaff's Photographic Atlas for the Biology Laboratory; 7th ed, Morton Publishing by B.J. Adams and JL Crawley. 2013

Lab Policies: found on Blackboard in Course Resources and in Appendix A of your lab guide.

Learning Outcomes:

- Ability to recognize and name, at the large-scale taxonomic level, a wide range of organism
- More accurate conceptions of the proportion of known biological diversity represented by various groups of organisms
- Improved ability to use information resources to independently learn about biological diversity
- Improved ability to describe and document observations of biological organisms
- Improved understanding of inheritance of genetic information as well as modification of genetic information through the process of evolution
- Improved understanding of how population sizes of particular species are estimated

Goals:

Think about biology outside of class.
Use biological terms and concepts in your question
Develop the ability to ask understandable and appropriate questions about biology.

Extra Credit

Structure:
You may receive 4 points for developing a question related to each unit of study (there are 3 units of study) for a total of 12 extra credit points.
For the extra credit to be awarded, post your unit question to BlackBoard. It must be a well thought-out and clearly worded question related to the topics of study not the mechanics or operation of the lab. (A question such as 'is this going to be on the practical' will not receive credit.) You may post more than one question per unit, but only one question will be awarded credit.

Response:
The instructor will post, as promptly as possible, answers/responses to all reasonable and understandable questions. In the response, your instructor may refer you to a link or reference site to locate the answer to your question on your own. They may briefly answer your question or recognize that the answer to your query may not be known at this time.
Some questions may be chosen for inclusion in class. Questions not posted in the "Extra Credit Questions" discussion topic of Blackboard or questions submitted after the unit deadline, will not receive credit.

Unit Deadlines:
For Unit 1-- Prokaryotes through Deuterostomes– post before 11:00 AM on Sunday, February 22, 2015

For Unit 2 –Fungi through Seed Plants post before 11:00 AM on Sunday, March 29, 2014
For Unit 3 –Segregation through Population Ecology post before 11:00 AM on Sunday, April 26, 2014

Any questions submitted outside of Blackboard and past the deadline for any reason will not be accepted for credit.

Week 1 (Jan. 12-15)	Introduction to Microscopes and Image Acquisiton (Topic 1)	Dissecting and Compound Microscope and image	4	In lab
			6	2 days after lab
		Academic Responsibility Quiz	5	Before next lab
		Prepare Prokaryote Diversity Plate		
Pre-Diversity Survey Available for extra credit				**February 1,**
Week 2 (Jan. 19-22)	Prokaryote Diversity (Topic 2)	Prokaryote PreLab	6	Prior to lab
		Prokaryote Diversity lab	5	2 days after lab
		Prokarote Diversity archean/bacteria results (part 2)	4	see below
		Prepare Archaean/bacteria study cultures for part 2 of this lab		
*****Monday labs complete Part 1 of Prokaryote Diversity lab virtually**				
Week 3 (Jan. 26-29)	Protist Diversity (Topic 3)	Protist Prelab	6	Prior to lab
		Protist Discovery Assignment	6	2 days after lab
		Slime Pet project (journal entries)	3	In Wk 4 lab
		Analyze part 2 of prokaryote lab		2 days after lab
Availablity of the Pre-Diversity Survey for extra credit			**2**	**Survey closes**
Week 4 (Feb. 2-5)	Poriferan, Cnidarian, & Lophotrochozoan Diversity (Topic 4)	Poriferan, Cnidarian, & Lophotrochozoan Prelab	6	Prior to lab
		Poriferan, Cnidarian, & Lophotrochozoan Diversity Assignment	9	2 days after lab
Week 5 (Feb. 9-12)	Ecdysozoan Diversity (Topic 5)	Ecdysozoan Prelab	6	Prior to lab
		Ecdysozoan Assignment	9	2 days after lab
Week 6 (Feb. 16-19)	Deuterostome Diversity (Topic 6)	Deuterostome Prelab	6	Prior to lab
		Deuterostome Diversity Assignment	9	2 days after lab
Week 7 (Feb. 23-26)	Practical 1	Lab Practical covering materials from wk 1through wk 6, End of Unit 1	40	In lab
		Unit 1 extra credit options	4	before Practical
		Midterm reporting out of 130		
Week 8 (Mar. 2-	Fungi & Lichen Diversity	Fungi & Lichen Prelab	6	Prior to lab
		Fungi & Lichen Diversity	9	2 days after lab
Week 9 (Mar. 9-12)	Seedless Plant Diversity (Topic 8)	Seedless Plant Diverstity Prelab	6	Prior to lab
		Seedless Plant Diversity	6	2 days after lab
		Prepare Marchantia project	3	Return on wk 12
Week 10 (Mar. 16-	**Spring Break**			

Week 11 (Mar. 23-26)	Seed Plant Diversity (Topic 9)	Seed Plant Diverstity Prelab	6	Prior to lab
		Seed Plant Diversity Assignment	9	2 days after lab
		Obtain Drosophila for journaling		Return week 13
Post Diversity survey for extra credit available				**Due April 17, 2015**
Week 12 (Mar. 30 - Apr. 2)	Pracitcal 2	Lab Practical covering materials from wk 8(Fungi) through wk 11(Seed Plants), End of Unit 2	40	In lab
		Unit 2 extra credit options	4	Before your
Week 13 (Apr. 6-9)	Segregation in Drosophila (Topic 10)	Segregation in Drosophila	4	Prior to lab
		Segregation in Drosophila	12	before leaving
		Drosophila journal	4	before lab starts
		Assign partners for Endangered species presentation		
Week 14 (Apr. 13-16)	Population Genetic (Topic 11)	Population Genetics Prelab	4	Prior to lab
		Predation and affect on alleles	6	Before leaving
		Sickle-cell alleles and malaria	10	Before leaving
Availablility of Post Diversity survey for extra credit ending this week			**2**	**Survey closes April 17, 2015**
Week 15 (Apr 20-23)	Exploring Primate Evolution & Phylogeny (Topic 12)	Primate Prelab	8	Prior to lab
		Primate & phylogeny analysis	12	Before leaving lab (group of 2)
		Unit 3 extra credit options	4	This week
Week 16 (Apr 27-30)	Threatened & Endangered Sp of Iowa & Population Ecology (Topic 13)	C-fern populations	4	Before leaving
		Pill bug mark and capture	4	Before leaving
		Endangered species	12	Before leaving
			295	Total course
			16	Possilbe Extra
			23%	PreLabs
			50%	Lab pts
			27%	2 Practicals