

Study guide for Exam 3

Note: The following list is NOT intended to be all-inclusive. It is intended to be used in conjunction with your lecture notes, handouts, the study questions posted for each lecture, research reviews and the textbook to help guide your studying for the third exam.

Be sure to review the tree quiz and attend the review session!

CUMULATIVE (50 PTS):

Be able to place taxonomic groups on a phylogenetic tree, AND plot synapomorphies and traits (for example: endothermic/ectothermic, oviparous/viviparous, sex determination, parental care, omnivorous/carnivorous/herbivorous, etc.) **on the tree.** *This tree will be completed and handed in before you receive the rest of the exam.*

From Dr. Hurme's lectures:

List of smallest taxonomic groups: Eutheria (placental mammals), Metatheria (marsupials), Monotremata, "Non-mammalian Cynodonts", "Non-cynodont Therapsids", "Pelycosaurus" (Non-therapsid synapsids), Neoaves, Galloanserae, Paleognathae, Enantiornithes, "Dromeosaurs", "Ornithomimids", Tyrannosauroidae, Sauropoda, Cerapoda, Thyreophora, Pterodactyloid, Rhamphorhynchoid, Gavialidae, Alligatoridae, Crocodylidae, Pleurodira, Cryptodira, Ichthyosauria, Placodontia, Plesiosauria

List of higher level taxonomic groups (contains two or more of the above taxa): Theria, Mammalia, Cynodontia, Therapsida, Synapsida, Neognathae, Neornithes, Aves, Maniraptora, Theropoda, Saurischia, Ornithischia, Dinosauria, Pterosauria, Ornithodira, Crocodylia, Crurotarsi, Archosauria, Sauropsida, Testudines, Lepidosauria, Amniota

DINOSAURS TO MAMMALS (100 PTS):

Evolutionary origins of morphological features of vertebrate groups: Be able to identify synapomorphies (shared derived features) and primitive features of each clade discussed in lecture.

Diversity, adaptation and natural history of vertebrate groups: To the extent that it was discussed in lecture, you should know about the biology, diversity, range and adaptations of major vertebrate groups. This includes biology and behavior shown in videos. Every bullet point on the handout is important!

Major themes:

- Adaptations related to feeding diversity in dinosaurs, birds and mammals.
- The evolution of birds from dinosaurs, including 3 main lineages leading to birds
- The evolution of feathers and flight
- The evolution of mammals from synapsids
- Convergent evolution of ecomorphs
- Prey capture modes of Theropoda
- Geological times for each major group, the effect of major extinctions, which groups replaced whom in time (Age of Reptiles, Age of Mammals, etc.)

Research reviews: Be able to connect information from the research review readings to course material.