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BIOL 403.01: Vertebrate Design and Evolution

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Vertebrate Design and Evolution
Biology 403 Lecture Syllabus
Professor Ken Dial (kdial@selway.umn.edu)
Matt Bundle (mbundle@selway.umn.edu)
Fall 2001, MWF 1:00-2:00, HS 207

Sept. 5,7	Selective processes of vertebrate design; phylogeny assignment (Are birds dinosaurs?)
Sept. 10,12,14	Evolutionary history of vertebrate form; systematics
Sept. 17,19,21	Developmental anatomy; ontogeny and phylogeny (Field Trip, Sunday 24 th , Bison Range)
Sept. 24,26,28	Skeletal anatomy; comparative form and function (Experiment #1, Scaling of whole-body power-swan flight)
Oct. 1, 3, 5	Muscular anatomy; comparative form and function
Oct. 8,10,12	Muscle form and function cont.; Exam #1 (50 points); (Experiment #2, Locomotor adaptations, chukar-lizard running)
Oct.15,17,19	The vertebrate nervous system: Coordination and integration
Oct. 22,24,26	Comparative locomotion, biomechanics and vertebrate design; scaling. (Experiment #3, Feeding mechanics in trout)
Oct. 29,31, Nov. 2	Respiration and circulation (Experiment #4, Energetics of movement in humans and birds)
Nov. 5,7,9	Evolution of Feeding
Nov. 12,14,16	Exam #2 (50 points) Digestion (Experimental #5: If necessary)
Nov .19	(Thanksgiving Break) Osmoregulation and excretion
Nov.26,28,30 Dec. 3,5,7	Urogenital Reproduction
Dec.11,12,14	Scaling: Isometry, allometry, and ecology
Dec. 18	FINAL EXAM: 1:10-3:10 pm (100 points, comprehensive) Textbook: Liem, Bemis, Walker, & Grange. <u>Functional Anatomy of the Vertebrates: An Evolutionary Perspective</u>