

GRANDE PRAIRIE REGIONAL COLLEGE  
DEPARTMENT OF SCIENCE

**ES 2070**  
**MASS EXTINCTIONS: DINOSAURS, MAMMOTHS, AND MAN?**

**COURSE OUTLINE**

**WINTER SEMESTER 2004 - 2005**

**Lecture**          Section A3                          W 6:00 - 8:50 pm                          Room J204

INSTRUCTOR:                          **Dr. Desh Mittra**  
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TRANSFER CREDIT:                  U. of Alberta                          EAS 207                          3 credits  
U. Of Calgary                          GLGY 307                          3 credits  
U. Of Lethbridge                          GEOL 2XXX                          3 credits  
Athabasca Univ.                          Scie XX                          3 credits

**COURSE OBJECTIVES:**          The course has been designed to discuss and describe the progression of life through time, with emphasis on important radiations and mass extinctions of life, and the theories on why they occur. Evolution, radiation, morphology and life habits of dinosaurs are considered in detail. The evidence for asteroid impacts in the geologic record, their frequency and effect on history of organisms through time. Origin and evolution of humans and their impact on the biosphere.

**TEXTBOOK**                          *Introduction to the Study of Dinosaurs*, by Anthony J. Martin, Blackwell Science.

**ES 2070 - Lecture Schedule (tentative).**

- 1) **Jan 05:** Introduction to course. Geological Column. Principles of Stratigraphy. History of Geology. Precambrian - origin of life and early atmosphere. First 3 billion years of life on Earth
- 2) **Jan 12:** Late Precambrian and Paleozoic life. "Explosion" of life near Cambrian-Precambrian boundary (600 -400 Ma). Paleozoic crises. Life, major mass extinctions and evolutionary radiations (faunal turnovers). (543-248 Ma)
- 3) **Jan 19:** Origin of vertebrates - evolution of early fish, amphibians and reptiles. The "mother of all mass extinctions"; end of Paleozoic (end Permian) extinctions

- 4) **Jan 26:** Mesozoic life and events (248-65 Ma). History of Dinosaur Discovery.
- 5) **Feb 02:** Introduction to dinosaurs and dinosaur morphology (shape/form). Theropoda (mainly carnivorous dinosaurs)
- 6) **Feb 9: Mid-Term Exam.1** Sauropoda. Giant quadrupedal earth-shakers
- 7) **Feb 16:** Ornithopoda (Bird Foot) dinosaurs. Thyreophora (shield bearing dinosaurs)
- 8) **Feb 23: Reading Week (no lecture)**
- 9) **March 02:** Marginocephalia - Ceratopsians and pachycephalosaurs. Dinosaur life cycles, and dinosaurs from Alberta.
- 10) **March 9:** Largest and smallest dinosaurs, and dinosaur physiology
- 11) **March 16: Mid-Term Exam. 2** Dinosaur traces: trackways coprolites, etc.
- 12) **March 23:** Origin of flight and birds. Cretaceous/Tertiary Boundary and mass extinction that wiped out dinosaurs 65 Ma
- 13) **March 30:** Cenozoic life and events (65-1.8 Ma). Evolution of Homo sapiens (persons) (7-0 Ma)
- 14) **April 06:** Quaternary/Holocene Mass extinction (0.5 Ma -0 Ma).
- 15) **April 13:** The future, and summary of term.

**Note: Topics will be given in the class. Individuals will pick a topic to present in the class. Students along with the instructor will grade it. Presentations could be in Power Point, Slide-show, chalk-board, video etc.**

#### **MARKS DISTRIBUTION**

Mid-Term 1	15%
Mid-Term 2	20%
Class Presentation	25%
FINAL	40%