

Grande Prairie Regional College
Department of Science

PALE 401
Paleontology Laboratory Techniques

Course Outline

Spring/Summer 2010

Instructor: TBA (Contact person – Chair, Department of Science)

Description: Students will learn the basic laboratory techniques involved in the preparation, restoration, curation and casting of fossils found in northwest Alberta, including, but not limited to those from the Pipestone Creek *Pachyrhinosaurus* Bonebed site (near Grande Prairie in northwestern Alberta, Canada). The course will take place during the summer, at Grande Prairie Regional College campus. Each student will complete assignments in the laboratory and will prepare a written report based on data acquired and methods learned during the laboratory component. The report is due at the end of the term. This course may require the payment of additional fees.

Prerequisites: This course is designed for senior level undergraduate students or graduate students in paleontology and requires consent of the Department.

Course Objectives

1. Provide Students with an understanding of the basic laboratory techniques used to prepare fossil specimens, including the methods used to remove matrix, protect, reconstruct and cast fossils either from a field locality (e.g. tracks and trackways), or in the lab.

Course Content:

This course is intended for advanced undergraduate and graduate students. The primary objective for the course is to train students in the preparation of field collected fossils used in

paleontology. The course will be given at the campus of Grande Prairie Regional College, in Grande Prairie in northwest Alberta. During that time, students will have practical training with preparing, preserving, restoring and casting field collected specimens in order to make them ready for scientific analysis. An emphasis will be placed on dinosaurs and other terrestrial vertebrate fossils, and specimens from different localities will be used to provide a demonstration of the effectiveness of different techniques. Specific laboratory projects will be assigned and graded during the course of the lab work. Furthermore, each student will generate an independent study project based on data collected and methods learned during lab work. The written project is due at the end of the term.

Marks Distribution

Lab work and Assignments:	70%
Written Report:	30%

Logistics:

The lab course will be conducted on the campus of Grande Prairie Regional College. Field localities may be visited to demonstrate the proper collection techniques required to make lab work easier and more effective. Field localities will also be visited to demonstrate field casting techniques for large, uncollectable fossils (e.g. dinosaur trackways). Participants will be responsible for their own meals; lodging may be obtained in the Grande Prairie Regional College residences.

Everyone is encouraged to have their own tools (hammer, awls, brushes, dental tools, etc..) although specialized preparation tools and all fossil preservative glues will be supplied.

Lectures:

Lectures will be directly relevant to preparation and/or paleontology, and each will last approximately one hour. In addition, each student will be encouraged to give one talk during the lab course. During the course of the lab program, there may be visits to other museums or fossil localities.

Fossil Preparation:

Students will be required to catalogue, identify and describe all fossils that they were responsible for preparing, and will be trained to do this correctly. Preparation techniques will include, but not necessarily be limited to: air scribing, air abrasives, thin sectioning, latex peels, casting techniques, imaging and reconstruction techniques.