

GRANDE PRAIRIE REGIONAL COLLEGE  
DEPARTMENT OF SCIENCE AND TECHNOLOGY  
FALL SEMESTER 2002-2003  
COURSE OUTLINE  
FORESTRY 1220  
INTRODUCTION TO SOILS

Lecture	Section A2	M,W 10:00-11:20	Room B304
Lab	L1 (F)	F 8:30-11:20	Room J107

**INSTRUCTOR:** Dr. Rob Young - Office #J215, Phone 539-2048, email RYoung@gprc.ab.ca

**TRANSFER CREDIT:** U. of Alberta SOILS 210 3 Credits

**OBJECTIVE** The course has been designed to teach fundamental concepts of soils. The course covers the physical and chemical properties of soil fertility, biology, geomorphology and the genesis and classification of soil

**PRE-REQUISITE** First year Chemistry is recommended

**TEXTBOOKS** Juma, N. 1999. The Pedosphere and Its Dynamics: A Systems Approach in Soil Science. Salman Productions, Edmonton, Alberta.

Brady, N.C., and Ray, R.W. 1999. The Nature and Properties of Soils. John Wiley and Sons, New York. (optional - available in library)

Beckingham, J.D., and Archibald, J.H. 1996. Field Guide to Ecosites of Northern Alberta. Canadian Forest Service, Northwest Region. (optional - available in library)

**LAB BOOK** Lab exercises for Soils, available in the bookstore.

**WEBSITES** <http://res.agr.ca/CANSIS>  
<http://www.soils.r.ualberta.ca/soils33o/class.html>

**LABS:** Weekly assignments will be given that will only roughly correspond to the lab manual. Each exercise will be due the first lecture period following the lab (Tuesday). As in life, late = 0%. There will be 8 "wet" labs that take place in the great outdoors, or in the lab in J107. There are, 5 computer labs that will be assigned for you to do on your own time - either in the library or at home. On some weeks, you may have to complete both a computer and wet lab, and on other weeks, there will be no lab. I recommend coming to class in order to stay current. The actual weekly tasks will involve observation of a set of sites that have differing vegetation, parent geologic material, and microclimate. Soils will be evaluated on the basis of several physical attributes that will be explained. Horizons will be sampled for later lab analysis. The weekly reports will later be compiled with data gained from the lab analysis with the ultimate goal of identifying soils at each site, citing distinct diagnostic properties that allow identification.

WET LABS involve analysis of:

1. Soils, Landscapes, and Parent Geological Materials
2. Soil Physical Properties (Color, Texture and Structure)
3. Pedon Properties (Color, Texture, and Structure)
4. Soil Mineralogy
5. Soil Chemical Properties
6. Soil Ecology and Soil Survey

**COMPUTER LABS**

1. Human Interaction with the Terrestrial Surface
2. Soils of Alberta Tutorial
3. Soil Ecozones: Case Studies
4. Soil Water Calculations
5. Modeling Soil Organic Matter

**MARKS DISTRIBUTION:**

Wet Labs*	20%
Computer Labs	10%
Midterm exam	35%
Final exam	35%
Total	<u>100</u>
	%

\* breakdown – weekly reports 10%, final report due on last day of class 10%