

# GRANDE PRAIRIE REGIONAL COLLEGE

## DEPARTMENT OF SCIENCE AND TECHNOLOGY

CHEMISTRY 2130

### COURSE OUTLINE

Winter 1999

Lecturer:	Dr. Barry Ramaswamy		
Room #:	J218		
Phone:	Home:	539 6239	Office: 539 2072
Prerequisite:	CHEM 2110.		
Transfer Credits:	University of Alberta	3 credits	
	University of Calgary	3 credits	
	University of Lethbridge	3 credits	
Textbook:	TEXTBOOK OF QUANTITATIVE CHEMICAL ANALYSES 4th Edition.		
Author:	Daniel Harris W.H. Freeman and Co.	New York, 1997	
Laboratory Manual:	University of Alberta Chem 213 Lab Manual.		

### GRADING

1.	Quiz	10 Marks
2.	Midterm	15 Marks
4.	Final Examination	35 Marks
5.	Lab Work	40 Marks

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Total	100 Marks
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Quizzes: Quizzes will be given every week for 20 minutes during the lecture period. Quizzes will cover assigned readings, lectures and experiments in the Laboratory.

Assignments: Assignments will be given each week and is due a week from the day it is received.

Absence: Absence from a Quiz or a Lab needs a valid reasoning. Only a written excuse from a Doctor or the College Health Nurse or the Registrar will be accepted. If you have to miss a Lab please consult the instructor to make it up.

## SYLLABUS

1. SPECTROPHOTOMETRY Chapter 6
  - 1.1 Absorption of Light. Beers law and Chemical Analysis.
  - 1.2 Applications of Spectrophotometry: Chapter 19  
Analysis of a Mixture.
  - 1.3 Spectrophotometers Chapter 20  
Interaction of Light with matter. Spectrophotometer.  
Sample Cells and Monochromators.
2. ELECTROCHEMISTRY
  - 2.1 Fundamentals of Electrochemistry Chapter 14  
basic Concepts, Galvanic Cells, The Nernst equation
  - 2.2 Electrodes and Potentiometry. Chapter 15  
Reference Electrodes, Indicator Electrodes, Ion  
Junctions etc.
  - 2.3 Redox Titrations: Chapter 16  
Shape of a Redox Titration Curve. General Approaches to Redox  
Titrations. Oxidation and Reduction Reactions.
  - 2.4 Electrogravimetry and Coulometry: Chapter 17  
Voltametry Chapter 18
3. SPECTROPHOTOMETERS
  - 3.1 Interaction of light with matter.
  - 3.2 Monochromators
  - 3.3 Analysis of mixtures Chapter 19
  - 3.4 Atomic Spectroscopy
  - 3.5 Chapter 20
4. ANALYTICAL SEPARATIONS
  - 4.1 Solvent Extraction Chapter 22
  - 4.2 Chromatography
  - 4.3 Gas and Liquid Chromatography Chapter 23
  - 4.4 Ion Exchange Chromatography
  - 4.5 Gel Filtration Chapter 24