

**GRANDE PRAIRIE REGIONAL COLLEGE**  
**DEPARTMENT OF SCIENCE AND TECHNOLOGY**  
**DIVISION OF CHEMISTRY**

**WINTER 2003**

JAN. 20 2003

Instructor: Barry Ramaswamy

Office: J218

Phone: Office: 539 2072 Home: 539 6239

Prerequisite: Chemistry 2110 or equivalent courses

Transfer Credits: U of Alberta, CH213 3 Credits

Lectures: Monday 4.00 – 5.20 pm J 203 Wednesday 11.30 – 12.50 J 203

Laboratory: Friday 1.00 – 5.50 pm

Text Book: Quantitative Chemical Analysis, 6th Edition  
Daniel C. Harris, WH Freeman and Company, 2002

Laboratory: Chemistry 213, Quantitative Analysis  
B. Kratochvil and W.E Harris  
University of Alberta, 2003

### COURSE EVALUATION

Quizzes	15%
Lab Work	40%
Midterm	15%
Final Examination	30%
Total	100%

Note:

Quizzes: There will be a quiz every week during the term. The first Quiz will be on Monday, January 27, 2002. The Quiz will include Laboratory work and Lectures done in class. Attendance to the quizzes and Laboratory is compulsory. Absence due to illness has to be substantiated with a report from the nurse or the physician. Attendance to the Laboratory is Compulsory. Absence should be substantiated with a letter from the nurse or the physician.

## SYLLABUS

1. Spectrophotometry.

A first look at Spectrophotometry. Simple spectrophotometer and Analysis using Spectrophotometers. Chapter 18, 19 and 20

18-1, 18-2, 18-3, 18-4, 19-1, 19-2, 19-3, 19-4, 20-2,

2. Laboratory Experiments.

All the Laboratory experiments will be explained in detail, with the theory and graphing techniques

3. Electrochemistry

Electrochemistry, Redox Titrations, Polarography and Ion Selective Electrodes

Chapter 14. Fundamentals of Electrochemistry

Chapter 15. Electrodes and Potentiometry

Chapter 16. Redox Titrations

Chapter 17. Electroanalytical Techniques

4. Atomic Spectroscopy and Spectrometers

Chapter 21. Atomic Spectroscopy

Instrumentation and Simple Analysis

21-1, 21-2, 21-3, 21-4, 21-5,

22-1, 22-4

5. Introduction to Analytical Separations

Solvent Extraction and Analysis

23-1, 23-2, 23-3, 23-4, 23-5

6. Chromatography

Chapter 24. Gas Chromatography

Chapter 25. High performance Liquid Chromatography

Gas Chromatography, High performance Liquid Chromatography, Ion Exchange Chromatography

24-1, 24-2, 24-3, 24-5, 24-7

25-1, 25-2, 25-3, 25-4, 25-5,

26-1, 26-2, 26-4,

7. Literature Search