

15/5/41  
Liberal Arts and Sciences  
Chemistry  
Timothy A. Nieman Papers, 1975-1997

Box 1:

**Course Materials**

Chemistry 319(Instrumental Characterization of Chemical Systems Laboratory)

Expt 5 Calcium 15E  
Expt 9 Fluorescence  
Expt 4 Copper/DA Storch

CEC Resource

Chemistry 322 ("Separation Methods") Electrophoresis Chapters

Electrophoresis Chapter Copy  
Electrophoresis C.1  
Electrophoresis C.2

Chemistry 322 TLC/LC

TLC C.1  
TLC  
Microbore LC

Chemistry 322 T.A. Notes

T.A. Notes Electrophoresis  
Basic GC T.A. Notes  
Basic LC T.A. Notes  
Retention Indices TA Notes  
GC Derivatization TA Notes  
Temperature Programming TA Notes

Chemistry 322 Exams

Old Exam I Theory/GC  
Old Exam II LC/Electrophoresis/FFF  
Old Finals/Oral Exam

Chemistry 322 Labs

Manual  
Ion Pair RPLC  
Basic GC  
Basic HPLC Reverse Phase  
LC Derivatization (Amino Acids)  
Electrophoresis  
Capillary Electrophoresis  
Retention Indices  
GC Derivatization (Hydroxybenzoic Acids)  
Lab TLC  
Lab Temperature Programming  
Lab TLC

Chemistry 322 Derivatizations

LC Derivatization Amino Acids  
LC Derivatization

Chemistry 322 Handouts

Handout Masters  
Resolution Handout  
With varying Peak Width  
Rate Theory

- Comparing % Loading and Temperature
- General Elution Problem & Solutions
- General Elution with Change of Conditions
- General Elution with Change of Conditions
- Temperature Program
- Effect of Solvent in LC
- Gradient Elution
- Column switch/Heartcut
- 2 Dimensional TLC
- Retention Indices
- GC Detectors
- SFC K' vs Temp.
- HPLC Connectors
- LC Pumps & Dampeners
- Mobile Phase Viscosity
- Reverse Phase
- Bonded Phase Chemistry Silica & Polymer
- Ion Exchange/Pair
- Size Exclusion
- LCEC Detection
- Amino Acid Derivatization
- TLC
- Trubey Table Multidimensional Chromatography Sample Clean Up
- Electrophoresis
- Field Flow Fractionation
- Field Flow Fractionation
- Chemistry 322 Schedules
  - Course Overview/Schedule
  - Old Schedules/Outlines
- Chemistry 322 Chromatographies
  - Planar & Column Chromatography Basics
  - Sample Chromatograms
  - Chromatography vs Race Cars
- Chemistry 322 Miscellaneous
  - Lab Report Policy
  - Reserve Books
  - Outside Speakers
  - Discrete "matchbox" Calculations

Box 2:

IBM 9000 TA Notes

Chemistry 322

- Field Flow Fractionation
- GC Detectors (4 pages) Copy 1
- GC Detectors (4 pages) Copy 2
- GC Detectors (4 pages) Copy 3
- Supercritical C-1 Fluid Chromatography
- Electrophoresis Figures C.2
- Electrophoresis Figures C.1

Handout on Chromatographic Theory Copy 3  
 Supercritical Fluid Chromatography C.2  
 Copy of Reserve Articles  
 Lab-Old Experiments  
 Library Reserve Rosie & Graob-"Thermal Conductivity Behavior" C.1  
 Library Reserve Rosie & Grob-"Thermal Conductivity Behavior" C.2  
 Spring 1992  
Lecture Intro  
Lecture Chromatographic Theory  
 Spring 1998  
 Electrophoresis Field Flow Fractionation  
 Gas Chromatography  
Lecture 1. General Elution Problem 2. Survey of Chromatography Modes  
 Fall 1990  
 Spring 1990  
 Miscellaneous  
Lecture Liquid Chromatography  
 Chemistry 420(Advanced Analytical Chemistry)  
 Exam I  
 Exam II  
 Exam III  
 Final Exam  
 Chemical Applications of the World Wide Web System  
 Fourier Domain Data Handling  
 Digital Data Handling of Spectra Utilizing Fourier Transformations  
 Graphical Representation of Equilibria (Copy 2)  
 Enke & Nieman Least Squares Smoothing  
 Graphical Representation of Equilibria (Copy 1)  
 Savitzky & Golay Least Squares Smoothing  
 Multichannel Array Detectors Articles pt.2  
 The Chemical Analysis of Things as They Are  
 Electrophoresis C.1  
 Electrophoresis C.2  
 Internet  
 Student Computer Accounts  
 Materials Characterize  
 pH Measure  
 Sensors  
 Separation & Mass Spec  
 Surface Character  
 Limits to Measure  
 Resource Chemometrics

Box 3:

Fall 1994  
 Chem 420 Folder  
 Scanning Probe Microscopies  
 Chemistry 322/424 Schedule  
 Spring 1994

## Chemistry 424 Schedule(Special Topics in Analytical Chemistry)

Fall 1990

## Chemistry 424

Reserve-Nieman Dose &amp; Guichon-"Effect of Extracolumn..." Copy 1

Reserve-Nieman Dose &amp; Guichon-"Effect of Extracolumn" Copy 2

Cramers &amp; Leclerq Vacuum Outlet GC

Cramers &amp; Leclerq Vacuum Outlet GC

## Chemistry 490 Handouts (Special Topics in Chemistry)

Masters

Course Outline

Reserve Books

Analytical Literature

Chemistry Titles Current Contents

Synthetic Matrix

Deloye Huckel Activity Solvent &amp; Equilibria

Log Cone Plots

Rate Based Essays

Fourier Series

DAC/ADC

Array Detector Monochromators Fluorescence, Atomic Spec Raman, NMR

Separations

Surface Techniques Mass Spec

Multichannel Array Detectors Yair Talmi Articles pt.1

## Chemistry 490 Assignments and Exams

Problems for Assignments or Exams

Assignment #1 Analytical Monographs

Assignment #2 Matrix Interference

Assignment #2 Activity/Equilibria

Assignment #4 Kinetics

Assignment #5 Spectroscopy

Assignment #6 Electrochemistry

Old Exams

Resource Spectroscopy

Sweedler Article Change Transfer Derectors

## Chemistry 490 Schedule

Fall 1991

Spring 1993

Fall 1993

## Chemistry 490 Lecture

Introductory (What is AC?) Literature

Chemical Concepts Equilibria, Kinetics &amp; Diffusion Immuno Essay

Measurement Concepts Encoding, Transducer, Sensor

Measurement Instrument &amp; Technique Loading Op-Amps D/A and A/D SNR

Electrochemistry

Spectroscopy

Mass Spectroscopy Surface Analysis

Box 4:**Product information, lab and research notes**

CIBA/Corning Products  
 London Diagnostics Products, 1988-1992  
 Keen Solutions/Katrina Heinze correspondence, 1994  
 Pierce Chemical Company, 1992-1993  
 Amine Project  
 Lab Notes and Data, May 1991-Feb. 1995 (29 folders)  
 Research Notes/Ideas, 1982-1992  
 Luminol ECL Response Surfaces–Glen Jirka, Alice Martin  
     Analytical Chemica Act correspondence, 1993  
     Data /Figures  
 Alice Martin–Research Data  
     1994  
         June-Nov.  
         Feb.-May  
     1993  
         July-Dec.  
         Jan.-June  
     1992  
         Mar.-Dec.  
         Jan.-March

Box 5:**Research notes, grade books, and articles**

    1991  
         Sept.-Dec.  
         July-Aug.  
         Feb.-June  
     1990  
 Heinze/Nieman presentation: Peroxyoxalate Chemiluminescence in Liquid Carbon Dioxide  
 Katrina Heinze thesis table and figures lists, 1995  
 Chemistry 122 students, 1975-1977  
 Chemistry 122 grade books  
     1975-1977  
     1981, 1985  
 Chemistry 123 grade books, 1983-1984  
 Professional Analytical Chemistry in Industry Course, 1989-1990  
 Published Papers  
     1976-1984  
     1985-1997  
 Chen/Zhang–ILITC, 1992  
 Electrochemical Generation of Luminol Chemiluminescence, 1987  
 Rao-Nieman  
     Nylon as an Immobilization Support Paper  
     Novel Flow Injection Schemes for the Determination of Peroxide ...  
 Determination of the products of Phenol and chromosubstituted phenols ..., 1986-1987

R. Blessing Probe article, c. 1988

Determination of amino acids and other ligands ... , 1987-1990

Swindlehurst and Nieman-sugars, 1988-1994

Glen Jirka, 1992

Moriarty/Trubey-Glucoside wheat, 1989-1990

Nekimken, Chen, Faulkner, and Nieman, 1985-1990

Solvent and reagent concentration effects in luminol and lucigenin chemiluminescence

A fiber optic hydrogen peroxide sensor based on luminol electrogenerated chemiluminescence

Dan-data