



I. CATALOG DESCRIPTION

CH 412 Advanced Structural and Synthetic Methods in Inorganic
Chemistry

3 credits
2 lecture hours
2 lab hours
(2c-21-3sh)

Prerequisites: CH 410 or CH 322 and CH 411

Advanced techniques used in the synthesis and characterization of inorganic compounds will be explored. In lecture, emphasis will be placed on the theory and application of structural and spectroscopic methods of characterization. In lab, emphasis will be placed on advanced methods of synthesis and structural characterization using representative examples of important classes of inorganic compounds.

CH 412 Advanced Structural and Synthetic Methods in Inorganic

II. Course Objectives

3

A. Introduce the student to advanced methods used in the preparation of

B. Emphasize in detail the theory and application of spectroscopic and

V. Required Texts

1. Ebsworth, E.A.V.; Rankin, D.W.H., Cradock, S. Structural Methods in Inorganic Chemistry, Blackwell Scientific Publications: Boston, 1987.
2. Shriver, D.F.; Drezden, M.A. The Manipulation of Air-Sensitive

1. Each student is expected to purchase a pair of safety goggles for use in the laboratory.

2. Devad "Composition" book to be used as a laboratory manual.

second half of the semester. We would expect it to be

Appendix

I. *Previous Syllabus for CH 412.*

CH 412 - Inorganic Preparations
Dr. John Woolcock
Weyandt 239C, X4828
Spring 1988

LECTURE/LAB - Tuesday 8:00-12:00

OBJECTIVES: Through a series of lectures and laboratory experiments, we will introduce the techniques used in the synthesis and characterization of a wide variety of inorganic compounds.

REQUIRED TEXTS: Angelici, R.J. Synthesis and Technique in Inorganic Chemistry; University Science Books: Mill Valley, CA; 1986.

Ebsworth, E.A.V.; Rankin, D.W.H.; Craddock, S. Structural Methods in Inorganic Chemistry; Blackwell Scientific Publications; Palo Alto, CA; 1987.

<u>COURSE REQUIREMENTS:</u>	Lab Reports	75%
	Homework Sets	20%
	Lab Notebook	5%

GRADES: Grades will be based on your percentage out of the total number of points.
90-100 - A
80-89 - B

LECTURES: Topics will include introductions to various synthetic techniques, methods of spectroscopic characterization, and the theory and background associated with various types of inorganic compounds. Although no exams or quizzes will be

GENERAL GRADING SCHEME FOR LAB REPORTS

Total 100 pts.

Pts.

15 Title Page and Organization

- a) Does each section start on separate page?
- b) Are all tables labeled?
- c) Are references in correct form? ACS Style Guide.
- d) Cluster spectra as an appendix. Organize by compound.
- e) General neatness and readability of discussions.

20 Comments on Procedure

- a) Are literature preps referenced?
- b) Table of reagents present?
- c) Notes on experiment? Are they appropriate?
- d) Table of product weights and % yield, simple phys. measurements (color, density, m.p., etc.)

40 Characterization

- a) Tables of spectral data-appropriate choice of most important features? Literature values (if any)? Properly referenced?
- b) Thorough interpretation of spectra.
(In some experiments data other than IR, NMR, IIV-Vis are collected. This