

Physical Methods in Inorganic Chemistry

Chem 204, Sp, 2007

Instructor: Jason Telford

Time: TTh 9:30-10:45 AM, M 5:30-7:00 PM

Office hours: MT, 11-12:00 AM or by appointment

Text: "Structural Methods in Inorganic Chemistry", 2nd Ed., E.A.V. Ebsworth, D. W. H. Rankin, S. Cradock (available from amazon.com, or you favorite online bookstore)

Reserve Materials: Physical Methods in Chemistry (Drago), Symmetry in Bonding and Spectra (Douglas, Hollingsworth), Molecular Symmetry and Group Theory: A Programmed Introduction (Vincent), Modern NMR Techniques for Chemistry Research (Derome)

Due to the fact that the Chemistry Library is now less accessible, I have copies of all these texts in my office- you are welcome to check them out.

Course Objective: To familiarize the student with the basic theory, practical application, and interpretation of data from selected physical techniques as applied to inorganic chemistry and related disciplines.

Grading: Three exams, each worth 100 points, will be given. Each exam will comprise an in-class and a take-home portion. The +/- grading system will be used. Homework problems will be assigned throughout the course, but will not be graded.

Other Course Matters: Feel free to contact the instructor at any time regarding course matters. It is essential that the student keep up with the material as it is presented. Contact the instructor, either orally or in writing, if you have any complaints about the course. I expect every student to maintain the code of academic honesty and honor. This is important particularly in regards to the take-home portion of exams, which should be worked independently.

<i>Course Outline:</i>	I. Introduction	(1 week)
	II. NMR spectroscopy	(4 weeks)
	multinuclear chemical shifts and coupling,	
	paramagnetic NMR,	
	multidimensional experiments, solid state experiments	
	III. ESR spectroscopy	(1 week)
	V. Magnetic methods	(0.5 week)
	VI. Mossbauer spectroscopy	(0.5 week)
	VII. Electrochemistry	(2 week)
	VIII. Vibrational spectroscopy	(3 weeks)
	(IR, ramán)	
	IX. Electronic spectroscopy	(4 weeks)
	UV/Vis, ORD/CD/MCD	
	Fluorescence	
	Scattered light methods	

X-Ray data collection and manipulation will be included as time and data permit