

**523 Chem. (2+0)**

**Physical Methods in Inorganic  
Chemistry**

# Physical Methods studied in this course

- I. Electronic spectroscopy.
- II. Magnetism.
- III. X-ray Crystallography.

# Learning methods

- Lectures
- Research paper critical reviews.
- Case study.

# Grading and evaluation

- Midterm examination 20 marks
- Two critical paper reviews 20 marks
- Case study report and presentation 20 marks
- Final examination 40 marks

# References and learning materials

- Lecture handouts.
- Reading list.
- Instructions on critical paper reviews and case studies will be emailed to you.

# Reading list

- S. F. Kettle, *Physical Inorganic Chemistry: A coordination Chemistry Approach*, Oxford University Press 1998.
- G. Davidson, *Group Theory for Chemists*, Mac Millan Press Ltd., 1991 (Translated to Arabic by M. Khalil 1998).
- K. C. Molloy, *Group Theory for chemists, Fundamental Theory and Applications, 2007, Horwood publishing*
- R. S. Drago, *Physical Methods in Chemistry, 1977, W.B. Saunders Company.*
- A.B.P. Lever, *Inorganic Electronic Spectroscopy, 1984, Elsevier.*
- E. I. Solomon and A. B. P. Lever (Edt.), *Inorganic Electronic Structure and Spectroscopy: Vollume I, Methodology, 2006, John Wiley & Sons.*

- E. I. Solomon and A. B. P. Lever (Edt.), Inorganic Electronic Structure and Spectroscopy: Vollume II, Applications and Case Studies, 2006, John Wiley & Sons.
- F. E. Mabbs and D. J. Machin, Magnetism and Transition Metal Complexes, 2008, Dover Publications.
- B.D. Cullity and S. R. Stock, Elements of X-Ray Diffraction, 2001,