Dr. R. W. Taylor, 2130 SLSC (office)
Office hours ( Tues., Thurs. 10:30-11:30 a.m., or by appointment )

Text: Spectrochemical Analysis, J. D. Ingle, Jr. and S. R. Crouch
(supplementary material will be available for topic no's. 5 to 8 )

Course Outline:

1) General Aspects/Review
2) Optical Components
3) Sources / Detectors
4) Atomic Spectroscopy
5) Molecular Spectroscopy
   a) UV-Vis ( absorbance, fluorescence, circular dichroism )
   b) Infrared ( Fourier Transform IR )
6) Photoelectron spectroscopy ( ESCA, Auger )
7) Electron Spin Resonance spectroscopy ( ESR )
8) Special topics (e.g., Gamma-ray (Mossbauer) spectroscopy, Raman, ICP-MS)

The course focuses on the basic principles that underlie the various spectroscopic techniques listed above, instrumentation, and the chemical information that can be obtained from the resulting spectra.

Grading
Two "hour" exams 150 points each
Final exam 225 points
Problem Sets 75 points
Total 600 points

Exam schedule (Tentative)
Exam I (Sept. 27 / Sept. 29, 2011)
Exam II (Nov. 1 / Nov. 3 2011)
Final Exam Dec. 15, 2011; 1:30-3:30 pm
University policies regarding reasonable accommodation and codes of behavior

The University of Oklahoma is committed to providing reasonable accommodation for all students with disabilities. Students with disabilities who require accommodations in this course are requested to speak with the instructor as early in the semester as possible. Students with disabilities must be registered with the Office of Disability Services prior to receiving accommodations in this course. The Office of Disability Services is located in Goddard Health Center, Suite 166, phone 405/325-3852 or TDD only 405/325-4173.

Plagiarism and Academic Misconduct

Students engaging in academic misconduct (including cheating, plagiarism, and any other action that may improperly affect evaluation) will be subject to sanctions in accordance with the Norman Campus Academic Misconduct Code. Violations can result in an "F" for the course and expulsion from the University.

Each student should acquaint her or him self with the University codes, policies, and procedures involving academic misconduct, grievances, sexual and ethnic harassment, and discrimination.

The instructor reserves the right to change any items contained in this syllabus. This includes, but is not limited to: course content, scheduled dates, and fraction(s) of final grade assigned to individual components of the course.
Supplementary Texts*

Spectroscopy, Vol. 1;  B. P. Straughan and S. Walker*
Spectroscopy, Vol. 3;  B. P. Straughan and S. Walker*
Principles of Instrumental Analysis;  D. A. Skoog, F. J. Holler and S. R. Crouch*
Basic Principles of Spectroscopy;  R. Chang*
The Spectrum in Chemistry;  J. E. Crooks*
Spectrochemical Analysis;  J. D. Ingle and S. R. Crouch*
* Texts marked with (*) will be on Reserve in the Chem-Math Library

Journals of Interest

Analytical Chemistry  TP 1 .I615
Analytica Chimica Acta  QD 71 .A47
Applied Spectroscopy  QD 71 .A6
Applied Spectroscopy Reviews  QD 71 .A635
Clinical Chemistry  RB 1 .A28
Critical Reviews in Analytical Chemistry  QD 71 .C39
Talanta  QD 71 .T3
Trends in Analytical Chemistry (TRIAC)  QD 71 .T74
Journal of Chemical Education  QD 1 .J93

Trade Magazines

Spectroscopy  (http://www.spectroscopymag.com)
American Laboratory  (http://www.americanlaboratory.com/)
Research & Development  (http://www.rdmag.com/)