

Chem 502
Advanced Analytical Chemistry
Prof. Dr. Şerife Yalçın
Office: Math110, Ext:7624

Hours: **Thursday: 13:30 - 16:30**

Texts: 'Instrumental methods of Analysis', Skoog, Holler, Nieman

'Spectrochemical Analysis', J. D. Ingle, Jr., and S. R. Crouch and

Some highlighted articles from the **Analytical Chemistry** journals

Lecture Notes:

<http://www.iyte.edu.tr/~serifeyalcin>
Teaching/Courses/ Chem 502 Advanced Analytical Chemistry

Course Objective:

To familiarize the student with the recent optical spectroscopic and surface analysis techniques in modern Analytical Chemistry.

Grading and Exams:

During the semester, research papers assigned to each student will be presented. These paper presentations will be counted as the equivalent of one exam score.

There will be a written final exam at the end of the semester.

The course grading scale will be determined based on the total class performance (exams, paper presentations, and class participation).

Topics which will be covered during the semester:

- Optical Components of Spectrometers
- Optical Sources, Transducers, and Measurement Systems
- Atomic Spectroscopy
- Molecular Spectroscopy
- Laser-Based Techniques
- Surface Characterization by Spectroscopy and Microscopy

About Presentations:

- Students are asked to prepare a PowerPoint presentation for 30 minutes long.
- Submission of a full report of their study is also required.
- Reports and Presentations should include,
 - 1- The principles of the spectroscopic/microscopic technique,
 - 2- The physical and chemical considerations and limitations,
 - 3- Optical, Mechanical and Electronic Instrumentation,
 - 4- Applications (from at least 5 different study from the recent literature)
 - 5- References
- Reports should be returned ON THE DAY OF PRESENTATION.