Course:  84.514 Advanced Analytical Chemistry

Instructor:  Dr. David K. Ryan
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       (not required) by Skoog, Holler and Crouch

Topics:  Electrochemistry (Potentiometry, Voltammetry)
         Molecular Spectroscopy (UV-vis, Fluorescence, Luminescence)

Exams:  Three exams to be given outside of class time, no cumulative final exam. Last hour exam will be given 1 week after last class at 8:00 AM in Olney 518. No excuse for missing exam. Cellphones cannot be used as calculators.

Quizzes:  Occasional unannounced quizzes at the end of class.

Grading:  Exams makeup 75% of total grade (25% each)
          Quizzes 5% (discretionary)
          Student Projects makeup the remaining 20%

Projects:  Each student must complete a project consisting of either a 10 minute class presentation or a research paper. Projects should build on fundamentals presented in class, but, should give additional information on advanced techniques or important applications. Project topics must be approved in advance. A minimum of 10 literature sources must be used (e.g. journals such as Analytical Chemistry, Applied Spectroscopy, Analytica Chimica Acta, and others; books and book chapters). A reference list must be submitted for either type of project. All projects must be completed by the last class (The earlier the better!)

Sample Topics:  Cryogenic Fourier Transform Spectroscopy
                Non-Dispersive Infrared Analyzers
                Coherent Anti Stokes Raman Spectroscopy
                Optical Multichannel Analyzers
                Potentiometric Stripping Analysis

Additional Material:  Handouts will be posted on the website occasionally for extra reading and to enhance the discussion of certain topics.