Lehman College, Department of Chemistry,

Introduction to Analytical Chemistry and Quantitative Chemical Analysis (CHEM 248)

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Lecture-Chem (248) syllabus

Week 1: Analytical Process; Measurements; Tools of the Trade and Experimental Errors: Chapters 0-3.

Review: Mathematical tools: Appendixes AP1, AP2, Appendix 3.
Excel: graphing data.

Week 2: Statistics & Quality Assurance; Calibration methods: Chapters 4-5.

Week 3: Chemical Equilibrium: Chapter 6.

Week 4: Titrations: Chapter 7 and Appendixes AP8, AP9, AP31 and AP32.

Week 5: Midterm I (2 hours) (Chapters 0-7)

Week 6: Activity and systematic treatment of chemical equilibrium; Monoprotic and polyprotic acid base-equilibrium: Chapters 8-10.

Week 7: Acid-Base titrations; EDTA titrations and advanced topics in chemical equilibrium: Chapters 11-13; Appendix AP11.

Week 8: Redox titrations and other electroanalytical techniques: Chapters 16-17.

Week 9: Midterm II (2 hours) (chapters 8-17).


Week 11: Spectroscopy II: Atomic and mass spectroscopy; Fourier infrared and nuclear magnetic resonance spectroscopy and their applications: Chapters 21-22.


Week 15: Comprehensive Final Exam:
15% Chapters 0-7
15% Chapters 8-17
70% Chapters 18-28.