

QUANTITATIVE CHEMICAL ANALYSIS

Chemistry 221, Autumn Quarter 2010
MWF, 9:30 AM, 1015 McPherson Laboratory
<http://www.grandinetti.org/Teaching/Chem221>

Lecturer: Prof. Philip Grandinetti (www.grandinetti.org/Contact) **Office:** 0044B McPherson - (614) 292-6818
Office Hours: Monday, Wednesday 10:30-11:30 AM

Lab Supervisor: Prof. Clay Harris (harris.594@osu.edu) **Office:** 2029 McPherson - (614) 292-2576

Teaching Assistants: Xiaoyan Guan (xguan@chemistry.ohio-state.edu), Tian Lu (tlu@chemistry.ohio-state.edu), Rebecca (Witherow) Andrews (rwithero@chemistry.ohio-state.edu), Andrew Zane (azane@chemistry.ohio-state.edu)

Required Text: "Quantitative Chemical Analysis", **Seventh Edition**, Daniel C. Harris

Homework on Web: <http://www.grandinetti.org/Teaching/Chem221/Homework>

Assigned homework will not be collected nor graded.

Statistics Slides on Web: <http://www.grandinetti.org/Teaching/Chem221/LectureSlides>

Grading: Laboratory 40%, Mid-term Exam 30%, Final Exam 30%

Syllabus:

| Week | Lecture Topic(s) | Chapter(s) |
|------|--|------------|
| 1 | Statistical Description of Data | 1 |
| 2 | Data Analysis | 3-5 |
| 3 | Chemical Equilibrium, Activity | 6,8,9 |
| 4 | Acid-Base Equilibria, Acid-Base Titrations | 10-12 |
| 5 | Electrochemistry | 14,15 |

Midterm Exam - Nov. 4th, Thursday, 6:00-8:00 pm - Room: 180 Hagerty Hall

| | | |
|----|-----------------------------------|-------|
| 6 | Redox Titrations | 16 |
| 7 | Spectrophotometry | 18,19 |
| 8 | Spectrophotometry Instrumentation | 20 |
| 9 | Atomic and Mass Spectroscopy, | 21,22 |
| 10 | Separations, Chromatography | 23-25 |

Final Exam - Tuesday, Dec. 7, 7:30 am - 9:18 am - Room 1015 McPherson

To have an exam question re-graded, turn in a written description of your concern no later than **one class period** after the exam was returned to you. Each exam in question will be re-graded in its entirety.

This course meets the following GEC Requirement:

1. Skills: B. Quantitative and Logical Skills

Goals:

Courses in Quantitative and Logical Skills develop students quantitative literacy and logical reasoning, including the ability to identify valid arguments, use mathematical models, and draw conclusions and critically evaluate results based on data.

Expected Learning Outcomes:

1. Basic Computational Skills: Students demonstrate computational skills and familiarity with algebra and geometry, and apply these skills to practical problems.
2. Mathematical and Logical Analysis: Students comprehend mathematical concepts and methods adequate to construct valid arguments, understand inductive and deductive reasoning, and increase their general problem solving skills.
3. Data Analysis: Students understand basic concepts of statistics and probability, comprehend methods needed to analyze and critically evaluate statistical arguments, and recognize the importance of statistical ideas.