

CHM 3120 — Introduction to Analytical Chemistry Summer, 2014

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Office Hours: M, 2nd Per.; T, 3rd Per.; W, 2nd Per.

Teaching Assistant: Gelin Looi, LEI 310, gelin@chem.ufl.edu

Objectives: In CHM 3120, students will learn the foundations of analytical chemistry. The course material comprises several broad topics:

- Sampling,
- Statistical treatment of data,
- Systematic treatment of aqueous equilibrium,
- Classical methods of quantitative analysis, and their modern counterparts.

Text: Daniel C. Harris, *Quantitative Chemical Analysis*, 8th Ed. W. H. Freeman and Co. (2010)

Grade Distribution:

Exams:	4 @ 100 pts.	400 pts.
Homework:	~10, weighted to 200 pts. total	200 pts.
Total		600 pts.

Grading Scale:

Letter Grade	Points	Letter Grade	Points	Letter Grade	Points
A	≥ 540	B-	≥ 408	D+	≥ 318*
A-	≥ 504	C+	≥ 384	D	≥ 300*
B+	≥ 468	C	≥ 360	D-	≥ 270*
B	≥ 432	C-	≥ 336*	E	< 270*

Course Mechanics: Class meets from 8:00 – 9:15 AM, M W and F. Please be on time, as entering LEI 207 after lecture has begun can create a disturbance.

Homework will be assigned weekly, and will generally comprise 5 – 10 problems. Be sure to show all work on homework assignments, *with correct units and significant figures throughout*. Homework must be submitted on paper; no e-mailed assignments will be accepted. Both Gelin and I will be available during office hours to answer questions. The final homework grade will be based on a scale of 200 points, with each assignment weighted equally. Homework assignments are necessary practice for exams, and are, therefore, an important part of the grade.

* Chemistry majors (both standard and biochemistry tracks) earning a grade below C must repeat the course to earn credit towards the degree.

There will be four (4) exams during the semester, each worth 100 points. All exams will be during scheduled class time. The dates for exams are May 30, June 20, July 18, and August 6. If you must miss an exam, you must make arrangements at least three business days in advance.

During exams, you are permitted to use a *non-programmable/non-graphing*, scientific calculator. Please Dr. Killian if you have questions about a calculator. Students may not share calculators. Use of cell phones, mp3 players, personal computers, and all other electronic or wireless devices is prohibited during exams. *Violations will result in a grade of zero on the assignment.*

Students with Disabilities: Appropriate accommodations will be provided, according to the policy at www.chem.ufl.edu/~itl/disabilities.html.

Academic Honesty: Students are expected to obey the University of Florida Honor Code, detailed at www.chem.ufl.edu/~itl/honor.html. Violations will be reported to the Office of Student Judicial Affairs.

The sale or transfer of graded or ungraded course materials to another student for use in this course (current or future semesters) is in violation of the Honor Code. All violations will be reported.

Tentative Lecture Schedule:

Week	Topics
May 12	The analytical method; statistics; propagating uncertainties; sample prep
May 19	Analytical tools and methods; experimental error; standardization
May 26	Aqueous chemical equilibria; activities
June 2	Solubilities; complexation; acids/bases: an intro
June 9	Systematic treatment of equilibrium
June 16	Monoprotic acids/bases; buffers; polyprotic acids/bases
June 23	Summer Break
June 30	Precipitation titrations; acid/base titrations; EDTA titrations
July 7	Basics of electrochem; potentiometry
July 14	Potentiometry; redox titrations
July 21	Spectroscopy
July 28	Separations
August 4	Closing ideas