

Chem 4000/6000-Spring 2017

FUND OF CHEMICAL ANALYSIS

Instructors: **Dr. Tarushee Ahuja** - Lecture (TR 11.00am-11.50am)
Office: 208 Courtland North, email: tahuja1@gsu.edu
Office Hours: Wednesday 10.00am-1:00pm, or by appointment

Dr. Jie Jiang - Lab Monday (1:00pm-4:15pm)
Lab Tuesday (1.30pm-4.45pm)
Office: Kell Hall 235, email: jjiang2@gsu.edu

Dr. Bin Xu - Lab Wednesday (1.00pm-4.15pm)
Office: Courtland North 203, email: bxu6@gsu.edu

Location: Lecture: Aderhold Learning Center 31
Lab: Kell Hall 698

Tutorial (CHEM 4001): Staff TBA
Days and Time: TR 9:30-10:20 am
Location: Classroom South 525

Text: Quantitative Chemical Analysis, 8th edition
Authors: Daniel C. Harris, W. H. Freeman and Co.
Writing Guide: American Chemical Society Style Guide, available on Reserve in the library.

Online Material: i-college

Final Exam: 27th April 2017, 10.45am-13:15am, Aderhold Learning Center 31

Study Tips: Attend all the classes and do homework to get better scores.

Course Description:

Chemistry 4000/6000 is one of the WAC (Writing Across the Curriculum) and CTW (Critical Thinking through Writing) courses offered by the department of Chemistry at Georgia State University. The class includes two independent portions: lectures and laboratories. The lecture section of the course counts for 40% of the final grade; 60 % of the final grade will be derived from laboratory reports. Make less than 50% of either section (20pts for lecture and 30pts of labs) will guarantee a grade of C- or lower.

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There will be three in-class examinations (5% each) and a final examination (25%).

The tutorial course (CHEM 4001) will focus on two parts: problem solving related to the homework assignments in the lecture; and all laboratory aspects. The homework practice will only be performed in the tutorial section, not in the lectures.

The course is designed to teach critical thinking and scientific writing following the American Chemical Society style. In the laboratory sections, the students will independently design experimental procedures, operate instruments commonly used in chemistry research, collect and analyze data, and draw conclusions and solve problems with scientific rationale.

Four papers will be written using real data obtained in the laboratory section of the course. The papers will be returned with comments by lab instructor/s. The students will be allowed to rewrite, revise and resubmit. Please refer to the lab syllabus for details. By the end of the semester the student should be able to demonstrate skills learned in introductory composition courses (proper grammar, sentence structure etc), demonstrate proper ACS style (contains the proper sections, cites references properly, etc), and combine theory and real data in a logical manner (explain your data based on theory). The papers and laboratory notebook layout count 60% of the course grade.

Students are responsible for class preparation and for any material presented in class whether it is in the textbook or not. Chemistry is a highly structured course, with each new topic based on others previously developed. Thus it is critical for students to keep consistently up-to-date in their readings and assignments. To fall even one class period behind is to risk considerable difficulty in mastery of future material. Students should 1) review previous material, especially if not perfectly understood 2) complete reading assignments before the lecture in which the topics are covered, or at least immediately after the lecture and 3) complete assigned problems and exercises on time, with an emphasis on mastery of concepts and principles involved rather than looking up an answer and finding the formula that gives you that answer. The syllabus provides a general plan for the course; deviations may be necessary.

University policy requires that faculty members must, on a date after the midpoint of the course to be set by the provost (or his designee) 1) give a WF to all those students who are on the roll but no longer taking the class and 2) report the last day that the student attended or turned in an assignment.

Policy Statement Regarding Student Integrity

The Georgia State University Policy on Academic Honesty is enforced in this course, including but not necessarily limited to infractions in the areas of Plagiarism, Cheating on Examinations,

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Unauthorized Collaboration, Falsification, and Multiple Submissions. The university's policy is published in the On Campus: The Student Handbook, available to all members of the university community. Therefore, all tests taken must represent your individual unaided efforts. To receive or offer information during an examination is cheating. The use of unauthorized supplementary materials during tests is also cheating. All laboratory work performed during the lab portion of a course must reflect your individual effort. Only original data obtained by your own in-lab experimentation are permitted to be used, except when specifically authorized by your laboratory professor. Data from supplementary sources (handbooks, reference literature, etc.) must be clearly referenced (title, author, volume, page(s), etc.). Falsification or destruction of data constitutes cheating. Conduct or actions that disrupt class or test periods or falsification of information related to chemistry courses by any student will be taken as violation of the policies of the Board of Regents of the University System of Georgia and the GSU Student Code of Conduct, Section 6.0. Any suspected offenses may be referred to the Department Chair or the Dean of Students for appropriate disciplinary action.

The last day to withdraw with a W is Feb 28th, 2017.

Due dates of Lab papers: see the lab syllabus.

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Month	Tentative Schedule
01/10/2017	Introduction, Lab, ACS style and writing
	Error and Statistics
	Statistics
	Calibration Methods
	Equilibrium
01/31/2017	Exam I
	Introduction to titration
	Activity, pH measurement, electric circuits
	Systematic Treatment of Equilibrium
02/28/2017	Exam II
	Acid Base monoprotic, Buffer
03/13-03/19	Spring Break (No Class)
	Acid Base polyprotic
	EDTA
04/03/2017	Exam III
	Instrumental Methods
	Electrochemistry: basic concepts
	Electrochemistry: more advanced topics
04/27/17	Final Exam